ANNEX

A

PRACTICAL TREATISE

ON

NASAL CATARRH.

BY

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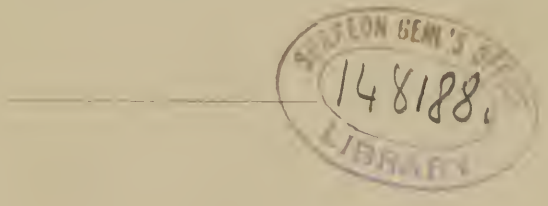

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To

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Whose life service in the cause of professional duty has won the admiration of all who know him, this little work is affectionately inscribed by his sincere friend,

The Author.

PREFACE.

Having seen and treated a large number of cases of acute and chronic nasal catarrh, and believing as I do that in many particulars a more accurate knowledge of these diseases is desirable amongst those who have had fewer opportunities of clinical investigation, I have written this work to supply in part a deficiency.

I have not attempted to make it learned in bibliographical research, and, indeed, to some instruments and methods of treatment adopted by others I have not even referred. I have wished especially to write a succinct, though complete account of personal experience and convictions, and thus, if possible, render it valuable as a practical guide to others.

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A TREATISE

ON

NASAL CATARRH.

INTRODUCTORY CHAPTER.

Mucous and purulent discharges from the nose are frequently met with in the daily rounds of the general practitioner, as well as in the more exclusive work of the specialist in rhinoscopy. To treat fully and exhaustively of all the different morbid conditions which may give rise to these discharges would be a work of compilation perhaps, more than one of individual thought and experience. For I can believe but few amongst the most favored have seen and treated more than one case, here and there, of suppuration of the frontal sinus, or rare tumor of the brain. I am, however, persuaded that it is in the power of every earnest worker to describe fully the symptoms and proper treatment of ordinary forms of disease, and also to give clearly and sufficiently their points of differential diagnosis, and such is the task I have undertaken with respect to catarrhal inflammations of the nose.

I have frequently remarked, in my intercourse with members of my profession, that almost all discharges from the nose are attributed by them to "catarrh;" and, whilst they admit how difficult it is to effect a cure of similar cases, they do not readily

accept the fact that different pathological changes may occasion symptoms closely resembling one another. In this way much confusion takes place, faulty medication is adopted, and the consequences of disease, aided with bad treatment, are often deplorable. It is my wish to give greater lucidity to this subject, to further what I am convinced are effectual means of treatment in many instances, to point out some commonly received, though erroneous notions, and to lay stress upon facts which appear to be but badly understood.

CHAPTER II.

DIVISION OF THE SUBJECT.*

All discharges from the nose, whether of a mucous, muco-purulent, or purulent nature, are either *idiopathic*, viz., caused by some local affection of the nasal passages, or, *symptomatic, i.e.*, occasioned by some neighboring morbid condition.

The idiopathic and symptomatic mucous and muco-purulent discharges are fewer in point of number, and have less importance when their quantity is considered, than the purulent discharges.

I. In the idiopathic mucous and muco-purulent discharges, we have the following affections.

A.—1. Acute coryza.
2. Prodromic coryza (influenza, measles, etc.).
3. Chronic coryza.
4. Hypertrophy of turbinated bones.
5. Post-nasal catarrh.
6. Mucous discharges caused by neuralgia of fifth cranial nerve.
7. Mucous discharges caused by mucous polypi of nasal fossæ.

B.—Amongst the symptomatic mucous and muco-purulent discharges are those caused by:
1. Inflammation and dropsy of frontal sinus.
2. Inflammation of maxillary sinus.
3. Adenoid vegetations of vault of pharynx.

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* From Thèse de Paris, No. 76, 1873, modified by the author.

II. In the division of purulent discharges we have:

A.—Amongst idiopathic.

1. Discharges due to certain forms of coryza (pseudo-membranous, ulcerous, etc.).
2. Glanders.
3. Eruptive fevers.
4. Foreign bodies, calculi of nasal fossæ.
5. Abscess of septum.
6. Fracture of bones of nose.
7. Caries, necrosis of nasal bones.
8. Divers tumors of nasal fossæ.
9. Abscess of nose.

B.—Amongst symptomatic.

1. Abscess of frontal sinus.
2. Foreign bodies in frontal sinus.
3. Polypi in frontal sinus.
4. Abscess of maxillary sinus.
5. Caries and necrosis of maxillary sinus.
6. Divers tumors of maxillary sinus.
7. Abscess of brain.
8. Abscess of orbit.
9. Abscess of floor of fossæ.
10. Caries of frontal bone.

The above division, at first, appears needlessly extensive, but if we consider it carefully we shall find that it is not redundant, but, on the contrary, decidedly clear and useful in order to appreciate properly the numerous affections of the nose. It aids, without question, our ability to make a rigidly exact differential diagnosis in a particular instance, and is a great help, therefore, to the thorough study of the diseases mentioned. Some of these affections are frequent, and we should become familiar with them on this account; others are not so frequent, but are graver in

their consequences, and, for this reason, deserve special study. A third class are rarely encountered, or are followed by less serious results; these latter are relatively unimportant.

It is my intention in this essay to devote myself solely to catarrhal inflammations of the nose. These affections are most interesting and important, inasmuch as nine-tenths of all discharges from the nasal cavities are occasioned by them.

CHAPTER III.

CONSIDERATIONS OF ANATOMY, PHYSIOLOGY, AND PATHOLOGY.

The nose is the special organ of the olfactory sense. The pituitary membrane, through the special function of the first pair of cranial nerves, affords protection to the pulmonary mucous membrane by warning us of the presence of deleterious gases or dusts. In a similar manner it, also, lends itself to our appreciation of the qualities of sapid substances. It likewise warms and moistens the atmospheric air in its passage to the lungs. In health, therefore, the mucous membrane lining the nasal passages is a guard to preservation and a promoter of life's enjoyment. When it becomes affected with disease its sensibility is dulled, and its special attributes are diminished or abolished.

The nasal fossæ are two irregular cavities situated in the middle of the face, extending from the base of the cranium to the roof of the mouth, limited laterally by the orbits, maxillary sinuses, and the zygomatic fossæ, on each side, and reaching from the nose in front to the naso-pharyngeal space behind. Each fossa is separated from its fellow, by the bony and cartilaginous septum. The openings and boundaries of the fossæ differ, of course, very greatly in the skeleton, and when covered, as they are during life, by their lining membrane. Under both conditions, however, it should be stated that they are narrower above than below, deeper in their middle portion, and communicate with four irregular sinuses of unequal dimensions, which are the frontal, sphenoidal, maxillary, and ethmoidal, and with four

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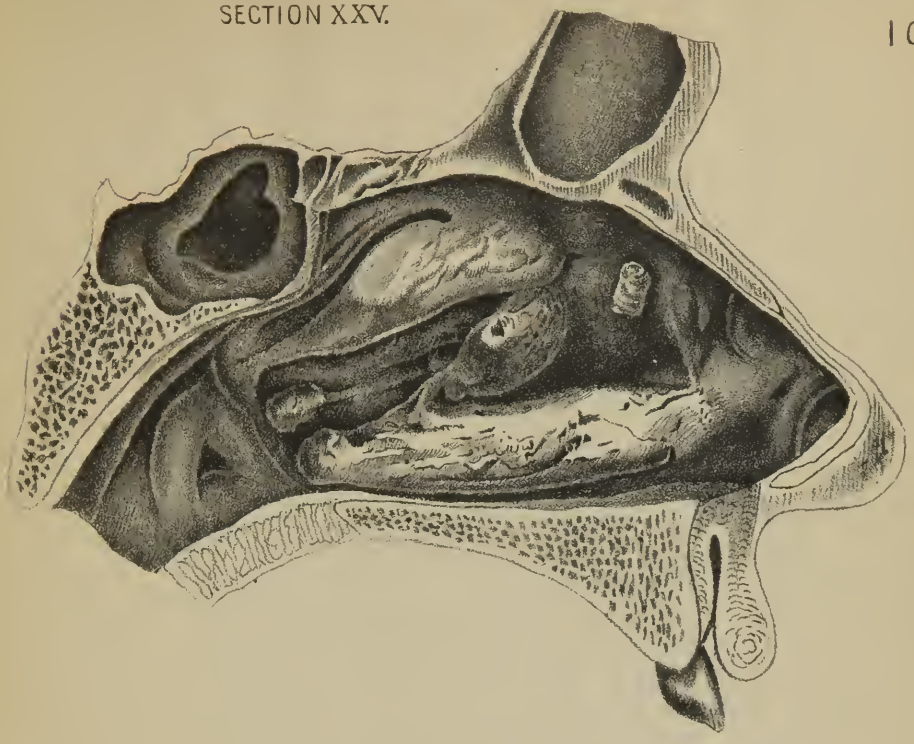

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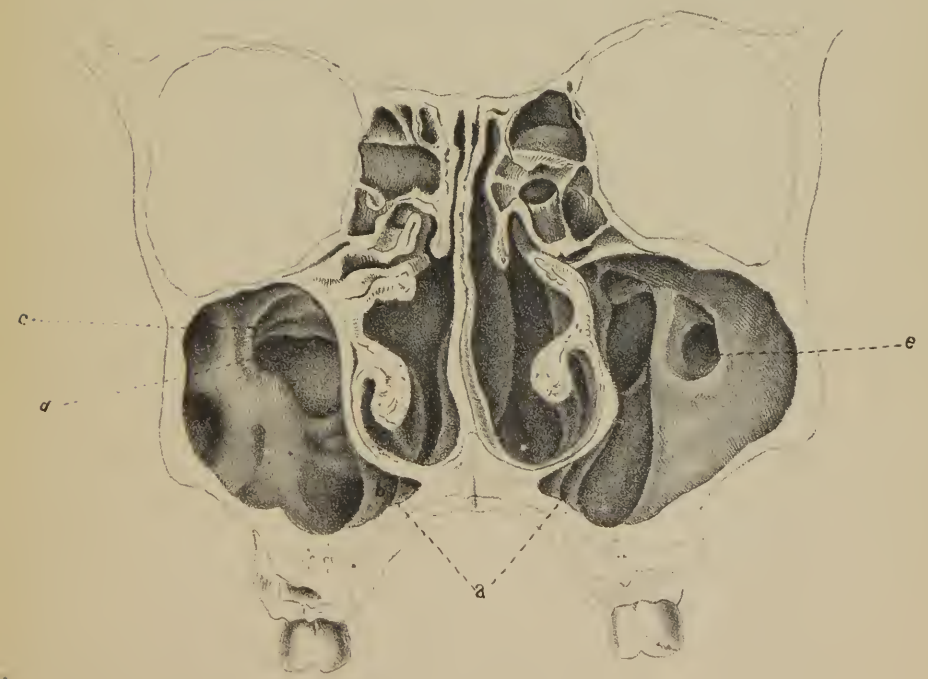

cavities, viz., the orbital, buccal, cranial, and the spheno-maxillary fossa. The roof of each cavity is concave and narrow, the long diameter extending in an antero-posterior direction. Upon its surface the openings of the sphenoidal sinuses are found. The floor is wider than the roof, flat, but with a slight concave configuration towards the sides. The inner wall is a thin, vertical partition frequently inclined to the left. The outer wall is

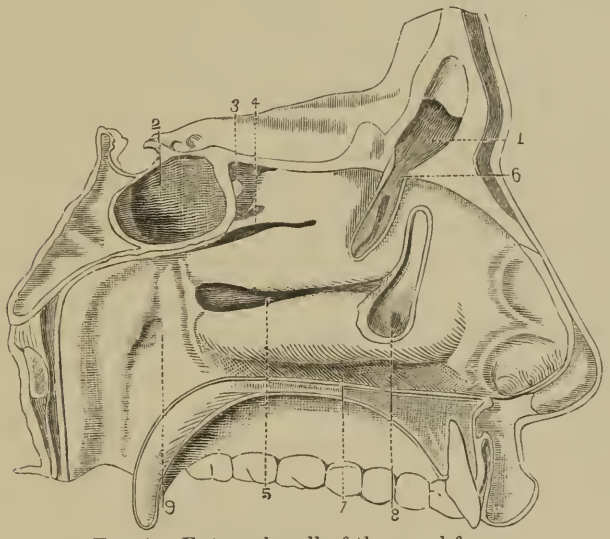

FIG. 1.—External wall of the nasal fossæ.

1. Left Frontal sinus.
2. Sphenoidal sinus.
3. Opening of the sphenoidal sinus.
4. Upper meatus.
5. Middle meatus.
6. Communication of infundibulum with left frontal sinus.
7. Lower meatus.
8. Inferior orifice of nasal duct.
9. Orifice of Eustachian tubes.

irregular and anfractuous, (fig. 1). It presents three long passages (meatuses), situated between the three turbinated bones

which are prominent in the fossæ in a horizontal direction. The upper meatus, the smallest of the three, is only seen in the posterior part of the fossæ; upon the walls of its cavity two foramina are visible, one of which communicates with the posterior ethmoidal cells, whence comes much of the secretion in old cases of post-nasal catarrh. The middle meatus also has two orifices; one leading into the frontal sinus by the infundibulum; the other, which is the most important, opening into the antrum. The lower meatus is the largest and presents the inferior orifice of the nasal duct. This duct, in catarrhal disease, frequently becomes blocked up with inspissated mucus, owing to infiltration of the pituitary membrane, causing a sensation of dryness in the nostril of the side affected, and the tears accumulate in the lachrymal sac, or even flow over the lower eyelid and cheek.

The surface of the nasal mucous membrane is generally smooth, except over the lower portion of the septum and the inferior turbinated bones, where the natural inequalities occasionally make one suspect, without other cause, the existence of a pathological condition. In the regions just mentioned, the membrane is thickest, leaving but a narrow space for the ingress and exit of air in normal respiration, and, as this portion of the mucous lining is very vascular, owing to the presence of veins of large calibre, its tissue becomes rapidly turgescent, and a more or less complete stoppage is produced upon the slightest influence of cold. During ordinary, or even forced inspiration, the current of air which passes into the lung does not reach the upper region of the fossæ, where the branches of the olfactory nerve are distributed, and thus the sense of smell is greatly blunted, or completely abolished. As the nostrils and passages behind become more obstructed, the tendency to breathe through the mouth is pronounced, and the jaws are never completely closed at any moment; soon the desiccating effects of a relatively dry air

upon the pharyngeal wall are experienced and a sensation of almost constant dryness of the throat is complained of. In this way we have a partial explanation of the glazed aspect of the posterior wall of the pharynx, which is so characteristic of *pharyngitis sicca*. This condition, therefore, frequently indicates nasal obstruction and is accompanied by fetid breath.

The reticular structure of the layer of tissue between the mucous membrane over the inferior turbinated bones and the periosteum has been strongly insisted on by Dr. Bigelow, of Boston.* This author likens it very aptly to that of the penis in man, or the labia in woman, it is very distensible, becomes turgid in a moment, and again as quickly collapses. In the treatment of catarrhal inflammations of the nose, many astringents will produce these effects, the one being followed by the other after a brief lapse of time. When the turgescence subsides in part, it is accompanied with an abundant flow of serum which exudes from the vessels of the mucous membrane and which renders the frequent use of a handkerchief a necessity.

The soft pulpy structure of nucleated cells which line the olfactory membrane is peculiarly adapted to the special function of this part; below a columnar epithelium, provided with cilia, is found, as being perfectly suited to a less sensitive need. To measure accurately the flavor of different substances it is essential that the first-named epithelium be in good condition and capable of receiving directly the odoriferous properties of different substances. If, during the act of swallowing, the aroma, or smell even of aromatic kinds of food, or wines of rich bouquet, does not penetrate the nasal surfaces, a great part of the effects and consequent pleasure is completely lost. The same result is accomplished by compressing the nares during the act of deglu-

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* *Boston Medical and Surgical Journal*, April 29th, 1875.

tition, for in this way the sense of smell is suspended in great measure, and the ordinary flavor of many kinds of solid food, such as freshly cooked meats, becomes almost imperceptible. A very similar effect, as already remarked, is, at times, produced by an acute or chronic catarrhal inflammation of the nasal passages, which suspends more or less completely the sensibility of the olfactory membrane.*

Repeated inflammations of the pituitary membrane lead too frequently, by propagation, to diseases which at first do not appear to have close relationship with them. Amongst the most important of these are chronic affections of the middle ear, the laryngeal sac, and the maxillary, frontal, and sphenoidal sinuses.

The pituitary membrane is rich in acinous glands, which, normally, exude a small amount of mucous secretion, thus moistening the surface. According to Cohen,† this moisture is more probably due to the deposit of water from the expired breath. Be that as it may, it is certainly true that a perfect physiology, which says a man ought never to blow his nose to get rid of an excess of secretion from the nasal passages, loses sight of the fact that, in our climate, an individual would thus become very uncomfortable and parched in breathing.

Extreme vascularity of the pituitary membrane explains the unusual frequency of epistaxes, which occur in catarrhal inflammations of the nose, and the special venous distribution over the inferior turbinated bones accounts clearly for the march of ordinary coryza.

The nerves of the pituitary membrane are of two orders: 1st, a nerve of special function, the olfactory. The terminal filaments of this nerve do not extend beyond the middle meatus, or the middle turbinated bone, giving a particular character to the

* Dalton, Human Physiology. Philadelphia, 1875, p. 602.
† Diseases of the Throat, 1st edition.

superior portion of the pituitary membrane, which, in this part, is called olfactory. 2d, nerves of general function, which come from the fifth pair of cranial nerves and the sympathetic. These afford positive assurance of even the slightest sensations of pain or discomfort, to all of which the olfactory filaments remain absolutely indifferent. The mode of termination of these latter is yet undetermined, and is a matter of speculation for the best modern physiologists. What we do know is, that the impression of a pungent odor, when once received, will remain sometimes for a long period without disappearing, although, in order to be perceived, it is essential to have the nasal passages completely pervious to air. A catarrhal condition of the nose, which has propagated itself to the ears, eyes, throat, and lungs is more frequently met with than a reverse progression of morbid processes. If the breath becomes offensive in respiration through the nose, affected with catarrhal inflammation, it is due either to a peculiar idiosyncrasy, which is rare, or to pent-up and altered secretions.

CHAPTER IV.

INSTRUMENTS FOR EXAMINATION OF THE NASAL CAVITIES.

The following are essential: 1, nasal speculum; 2, small rhinoscopic mirror; 3, tongue-depressor; 4, head-reflector; 5, a long delicate probe; 6, an argand gas-burner. With the above instruments and one element, *i. e.*, light, all investigations of the kind being considered may properly be made.

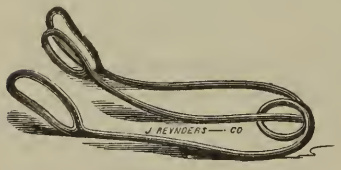

FIG. 2.

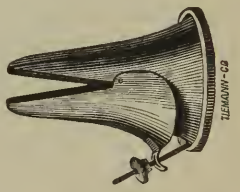

FIG. 4.

1. *Nasal specula.*—There are many kinds. The one I usually prefer is that known as Goodwillie's (fig. 2). It is efficient, light

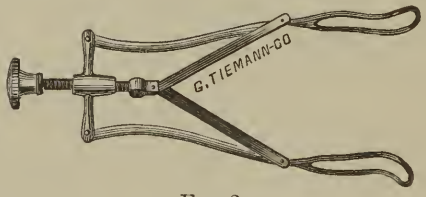

FIG. 3.

in structure, and easily manipulated, and, also, has an additional advantage in that it can be made to hold itself within the anterior nares. Of the other specula, Fraenkel's (fig. 3) is occasion-

ally advantageous when we desire to introduce the blades at the same time into both nostrils; and Duplay's (fig. 4), or better still, the ordinary hard-rubber ear-speculum, when we desire to cauterize the mucous membrane of the turbinated bones, without danger of touching the sides of the nostrils with the caustic employed. Dr. D. H. Goodwillie, of this city, has had constructed for use with the galvano-caustic wire and with Paquelin's thermo-cautery, a number of specula in annealed glass, usually more or less funnel-shaped, which meet two indications very well, *i. e.*, 1, considerable isolation of heat, and 2, inalterability by acids.

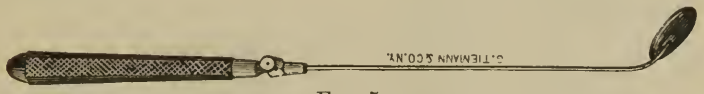

FIG. 5.

2. *Rhinoscopic mirror* (fig. 5).—This mirror resembles closely the ordinary laryngeal mirror, except that its dimensions are smaller. It should be circular, covered with amalgam posteriorly, have a plain reflecting surface, be set in German silver, or silver-gilt, and inclined at an angle of 120° to 140°. Its diameter must usually be about five-eighths of an inch, its thickness one-twentieth of an inch. The stem or shank should be straight,* of flexible metal, about four inches in length, and soldered to the back of the mirror; it may, however, be made to slide in a hollow handle of hard wood, and be lengthened or shortened, according to the depth of the mouth, by means of a button and screw. A movable handle is convenient, as it can be used with mirrors of different sizes and shapes, if required, the only objection being that the button and screw at times become loose, and one may be left without means of proper examination.

3. *Tongue-depressor* (fig. 6).—Turek's tongue-depressor is the

* According to Browne, it should be slightly curved.

best, as the left hand is kept away from the median line during its employment, and does not get in the way of the small mirror. It is made of metal, with a wooden handle, and is provided with several tongue-pieces of different sizes, so as to be applicable to children and adults; the under surface of the tongue-piece is roughened, in order to secure a better hold of a large or unruly member. An ordinary folding tongue-depressor (fig. 7) is more suitable when a posterior rhinoscopic examination is made at the patient's house, on account of its portability. In making use of

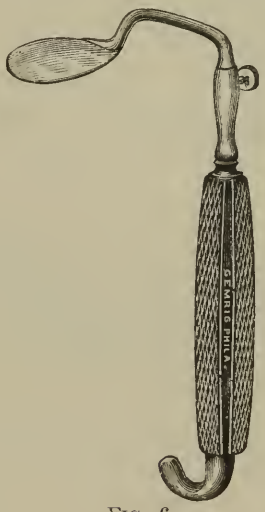

Fig. 6.

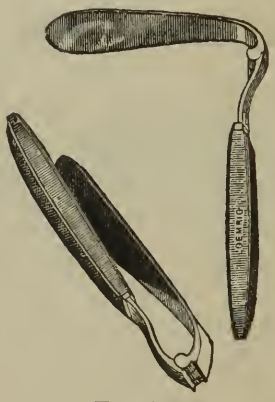

Fig. 7.

any suitable form of tongue-depressor, the effort should be to press the base of the tongue downward and forward, and thus facilitate the introduction of the small mirror by enlarging the posterior buccal space.

4. *Laryngeal reflector* (fig. 8).—It should be a circular mirror, about three and a half inches in diameter, with an oblong aperture in the centre. It should be slightly concave, with a focal distance of fourteen to fifteen inches, and attached either to an

elastic head-band, with support and buckle (Kramer), or to a speetaele frame (Maekenzie) by means of a ball and socket joint, which allows the mirror to be moved in any direetion at will. The mirror ean be worn before the right eye, upon the forehead, or in front of the nose and mouth; either method is good, and is usually determined by habit. Of eourse, if the mirror be earried on the forehead, a perforation in its eentre is not essential.

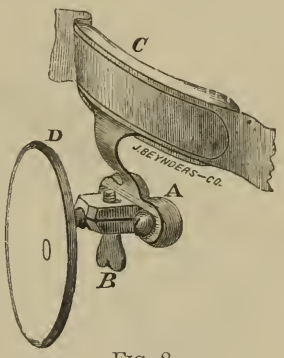

Fig. 8.

5. *Probe* (fig. 9), should be made of aluminium or silver; it is then easily pliable and particularly suited for all necessary exploration into the anterior nares or post-nasal space.

In certain eases, also, a uvula holder may be required (fig. 10);

Fig. 9.

my own experienee, however, would go to prove that, in almost every instanee any attempted control of the palate by such means will only inerease the diffieulty of the examination.

Of instruments whieh eombine the use of the rhinoseopie mirror with palate-hook, thus giving freedom to one of the hands of the operator, that of Duplay (fig. 11) seems to me to be preferable.

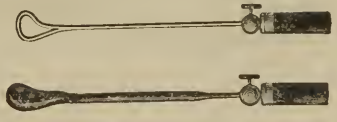
Fig. 10.—Uvula Holders.

When the spaee between the velum and pharynx is small, it may be enlarged by drawing the free margin of the palate forward

into the mouth, by means of two india-rubber cords, according to the method of Dr. Philip S. Wales, described further on in the treatment of chronic follicular disease of the naso-pharyngeal space.

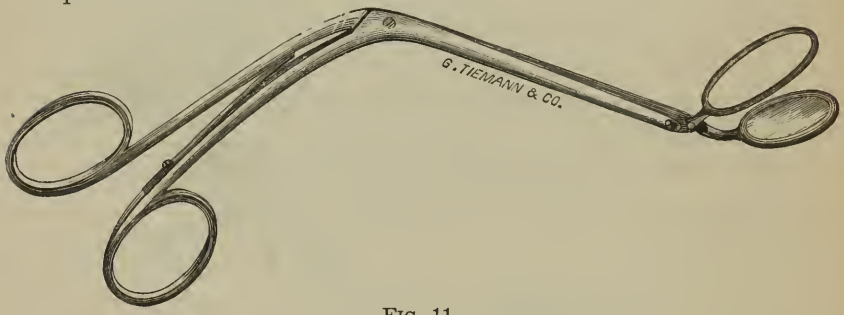

Fig. 11.

6. *Argand gas-burner.*—The most perfect lamp without question, for rhinoscopic examinations, is that known as the rack-movement lamp, of Mackenzie (fig. 12). This lamp readily admits of perpendicular and horizontal movement, and the rack and handle in the lower tube enable one to place it at any height

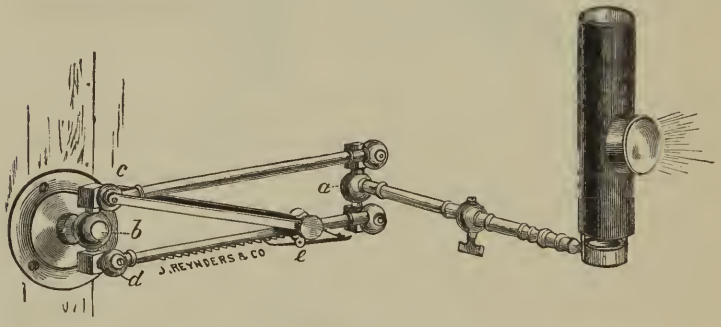

Fig. 12.

which may be desired; the gas-arm may be screwed to a gas-pipe projecting from the wall, as above shown, or may be attached to an upright bar fixed in a stable square base. A metal chimney,

colored in black, inside of which is another in glass, which prevents the light from smoking, and the transmission of too much heat laterally, is a useful addition. The metal chimney should have a circular aperture upon one aspect, into which a plano-convex lens is fitted: this lens placed in front of the flame will considerably increase the power of the light, provided it be placed at its exact focal distance, with its plane face directed toward the flame; it will, also, concentrate the rays of artificial light upon the head reflector, and thus help to form a broader and more uniform disc of light in the back part of the patient's throat, when the reflector is turned in that direction. Instead of artificial light afforded by the combustion of gas or oil, the solar rays, on a bright day, may be projected upon the laryngeal mirror, after being first concentrated by the reflector.

CHAPTER V.

INSTRUMENTS FOR THE TREATMENT OF THE NASAL CAVITIES.

I. INSTRUMENTS FOR CLEANSING PURPOSES.

1. *Different forms of douche apparatus.*—These are all simple modifications of the one originally known as Weber's, and later as Thudichum's (fig. 13). They consist mainly of a reservoir for liquid, a piece of rubber tubing, and a nozzle made to fit the anterior nares. When the reservoir containing fluid is placed at a height above the level of the patient's nose, and the nozzle introduced into this organ, there will be a continuous outflow, the force of the current being in proportion to the degree of elevation of the reservoir. There can be but little doubt that the nasal douche, as a cleansing apparatus, is tolerably effective, although not nearly so thorough in its action as has been generally admitted (fig. 14). I do not believe that either the vault of the pharynx, or the superior meatus and turbinated bones are cleansed at all by the nasal douche; true it is that a great deal of inspissated mucus, hard crusts, and soft fetid secretions are frequently brought away, and I was disposed for a

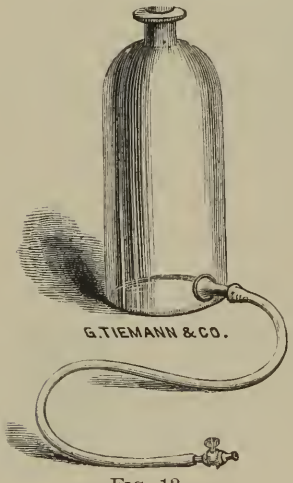

FIG. 13.

long while to console myself in the belief that the nasal cavities were effectually rinsed at the termination of each operation. Experience, however, has taught me the fallacy of such a belief, and now that I inspect the nares anteriorly after these washings, and what is still better, make a rhinoscopic examination posteriorly, when it is possible, I find at times there still remains at the top of the pharynx, or around or contained in the posterior open-

FIG. 14.—Antero-posterior section of the face and head (Rumbold).
a, Inferior turbinated bone;
b, middle turbinated bone;
c, superior turbinated bone;
d–d, location of incrustations to be removed;
e, line showing the height of the water in the nasal passage irrigated by the Weber douche. "Dotted line" indicates the position of the posterior border of the septum nasi, the turning point of the liquid in leaving the other nasal passage.

ings of the nose, strings of viscid mucus which have been left untouched. Whenever this proof is wanting, we shall have to consider the striking clinical fact of a crust, or large mussel-shaped bit of mucus being expelled from the nose after what we inferred wrongly had been a most complete cleansing. The explanation of this phenomenon is readily found. Large pieces of mucus have become detached from the roof of the nose, and more particularly from the cribriform plate of the ethmoid bone, the poste-

rior surface of the nasal bones, and the upper turbinated bones, owing no doubt to increased temporary secretion, brought on by the use of the douche, and have fallen to the floor of the nasal cavities. Here they have been the occasion of more or less unpleasant and abnormal sensations, and a strong effort of expiration is sufficient to expel or throw them off altogether. While much of the irritating and concrete mucus is thus got rid of, a certain amount remains behind, and, by the morbid alterations which it assumes, is the source of further disease, or at all events, by its constant contact with parts already diseased, protracts or renders impossible the return of these latter to their normal state. (Any one who doubts the validity of my statements will find them fully substantiated in an article published by me in the New York *Medical Record*, July 15th, 1874, entitled "The Nasal Douche, what it accomplishes, and what it does not." As stated in that article, I feel myself indebted for some of my ideas to Dr. Thos. F. Rumbold, of St. Louis.)

If, however, there were no objections to the use of the nasal douche as a cleansing apparatus, other than the fact that its action was not thorough in the sense of penetrating all parts of the nasal fossæ, my opposition to its employment would not be so intense as it is; but being familiar with the frequent inflammatory diseases of the ear occasioned by its use, I am convinced, for this reason, it ought not to be used. It is not sufficient to urge, as Fraenkel and others have done, that, with proper precautions, the injurious effects upon the auditory apparatus may be wholly avoided. Perhaps this is true, but I, for one, am of opinion that no instrument in regard to which a lack of attention, whilst employing it, is frequently followed by grave and lasting disorders, should be commended by the profession—particularly for general use by the laity. Moreover, I now believe, as many closely observed cases have proved it to me, beyond a shade of doubt, that

the relief from obstruction afforded by the douche is merely temporary, never permanent.

Besides, if its use be persisted in, it will ultimately fail to effect temporary good results. It will even occasion at times permanent blocking up of the nasal cavities, produce anosmia, blunt the taste, and not infrequently cause inflammation of the conjunctivæ.

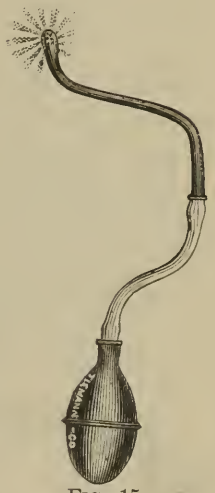

FIG. 15.

2. *Different forms of Syringes.* — Whenever cleansing instruments are required, syringes may be employed with less injurious effects following their use than the continuous nasal douche. The most recommendable forms are Warner's catarrhal douche (fig. 15), and the ordinary posterior nares syringe in hard rubber (fig. 16), I have never known a case of *serious* ear trouble follow the use of the instruments just mentioned; but I have heard patients speak several times of unpleasant, itchy sensations in the ears after their employment —and I have little doubt myself that, if an effort of deglutition be made several times during their use, a certain quantity of

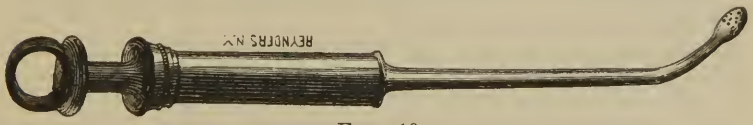

FIG. 16.

water will penetrate, almost of necessity, into the Eustachian tubes, and be carried on into the tympanic cavity, where it doubtless causes slight trouble for the while, and may become, if repeated frequently, the starting point of imperfect audition (sub-acute aural catarrh).

In regard to the nose, I am quite sure that syringing by means

of a divided and interrupted jet or stream will, without question, ultimately produce permanent infiltration of the mucous and submucous layers, and thus more or less blocking up of the nasal passages. The employment of these instruments should be restricted, therefore, if used at all, to exceptional cases of very aggravated catarrhal inflammation of the nasal fossæ, usually accompanied with fetid odor and pent-up, hardened secretions. In ordinary catarrhal disease, their use is never required, and it can be substituted by other means quite as effectual, and far less liable to cause harm.

3. *Atomizers.*—The one which I have found most useful and which I cordially recommend is that known as the hard-rubber spray producer (fig. 17) of Dr. Geo. M. Lefferts, of this city. By its means, and with some persistence in its use, I have been able to rid even the worst cases of old, hardened, pent-up fetid secretions. There may be cases in which the instrument known as Dr. Rumbold's catheter nasal douche (fig. 18) * is useful in ridding a patient of crusts which are situated very high up in the nasal fossæ. After a pretty thorough trial, however, with this instrument, I have abandoned its employment, first, on account of its bulk and somewhat unwieldly nature, and then, too, because I found it more painful in use than Dr. Lefferts' spray producer, without any appreciable compensating good results accompanying its employment. As Dr. Rumbold speaks of his instrument in very warm terms, after frequent and long-

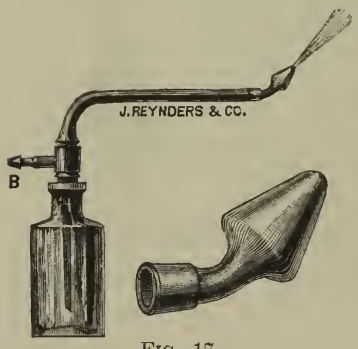

FIG. 17.

* This is really a misnomer, as the instrument referred to throws "a coarse spray, or spattering current of liquid and air."

continued trials of it, I prefer to add the description accompanying his original woodcut. "It is a flask-shaped bottle (*a*) holding about one and a half pints. Into the rubber stopper are inserted two metal tubes, whose outer extremities are bent at right angles and turned in opposite directions. One of these only pierces the stopper and has attached to it the India-rubber bulbs (*f*); the other almost reaches the bot-

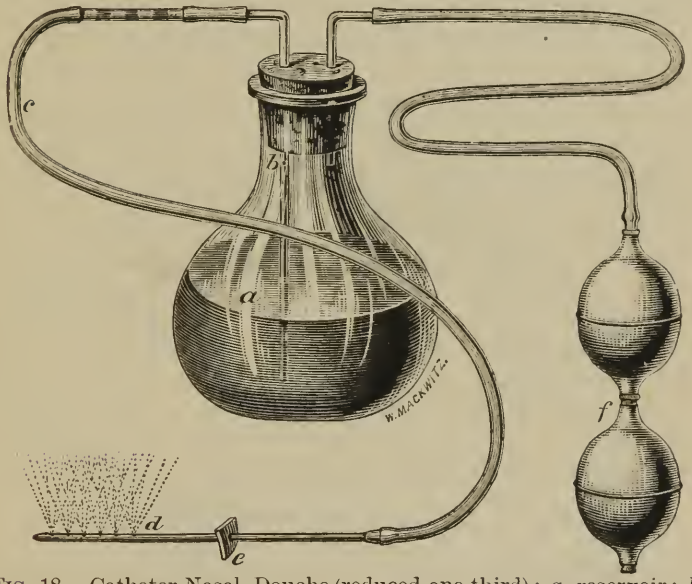

FIG. 18.—Catheter Nasal Douche (reduced one-third); *a*, reservoir; *b*, metal tube for the passage of the fluid, having a small aperture in its side for the entrance of air; *c*, rubber tube; *d*, foramina for escape of coarse spray; *e*, catheter; *f*, India-rubber air bulbs, used to force air in the bottle.

tom of the vessel (*b*), and has attached to its outer extremity a rubber hose (*c*); and to the hose is fastened a No. 4 catheter (*e*), on a line with its axis. The free extremity of the catheter is closed. The tube, whose lower extremity dips into the medicated fluid, has a small aperture in its sides, just under the rubber

cork (*b*);* this is to allow air to enter during the passage of the liquid, the effect of which is, causing the tube to contain beads of air and fluid in close succession, so that when escaping from the small openings in the catheter it will resemble a coarse spray. The catheter is introduced into the affected nostril, and the stream directed upward (fig. 18*a*). A slight rotation on its axis will cause the spattering current of fluid and air to *wash* and *blow* the secretions away from their lodging places in a milder

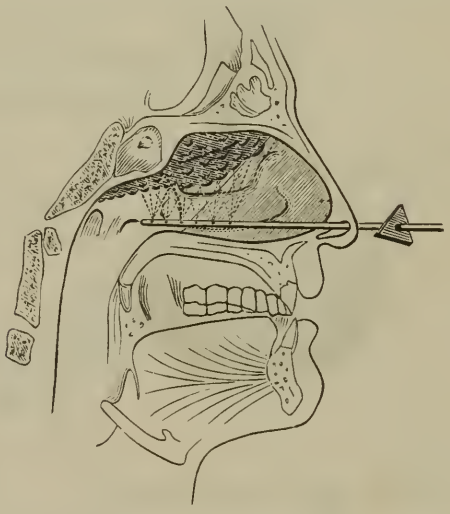

FIG. 18*a*.—Showing the catheter in position in the left nasal fossa (Rumbold).

and yet more efficient manner than a steady flow of liquid. The cleansing process may be greatly assisted by the patient closing the nostril that is not treated, and then giving a quick and forcible blow out of the one being washed, sending the liquid and everything loose out with great force."

* This opening should neither be too large nor too small, as either will prevent the formation of a coarse spray and thus interfere with the efficacy of the instrument.

A nose spout (fig. 19), to be used by the patient, resembling an ear spout, will be useful in preventing the liquid and muco-purulent secretions from falling on the lips, and from soiling the clothing while blowing the nose. This same author speaks of a simple mode of cleansing the nasal and pharyngo-nasal passages* "for all patients whose secretions do not become locked in the nasal cavities by reason of their hardness and size." This method consists essentially in inclining the forehead at different angles to the horizon, and then inhaling liquids from the hollow hand with sufficient force to penetrate all parts of the nasal fossæ and thus rid them of all adherent secretions. For a poor class of patients, whose circumstances do not permit them to purchase an atomizer, this procedure may perhaps be adopted for a brief period with advantage, but should not be continued so soon as the offensive obstructive crusts are removed.

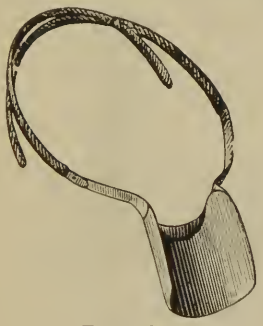

FIG. 19.

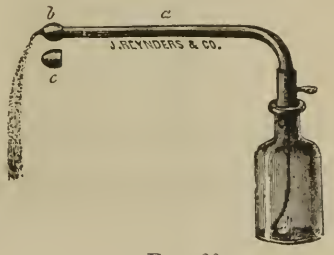

FIG. 20.

II.—INSTRUMENTS FOR MEDICATION OF THE NASAL CAVITIES.

1. *Douche Apparatus and Syringes.*—A thorough and wide experience has proven to me beyond a doubt that, as a means of curative medication of inflammatory affections of the nasal fossæ, these instruments are of little, if any, use. Besides the reasons

* Chicago *Medical Journal and Examiner.* May, 1877.

already given, I would add that solutions of sufficient strength to be really curative in their action cannot be employed in this manner without causing a considerable degree of pain of the head and eyes, which will last at times during several hours.

2. *Atomizers.*—A coarse spray producer (*vide* fig. 17) sometimes, and fine spray producers more frequently, have afforded me beneficial results. The ordinary hard rubber atomizer (fig. 20), to which may be attached a tip curved at a more or less acute angle for spraying the posterior nares and naso-pharyngeal space, and the glass spray tubes of Sass (fig. 21) attached by means of India rub-

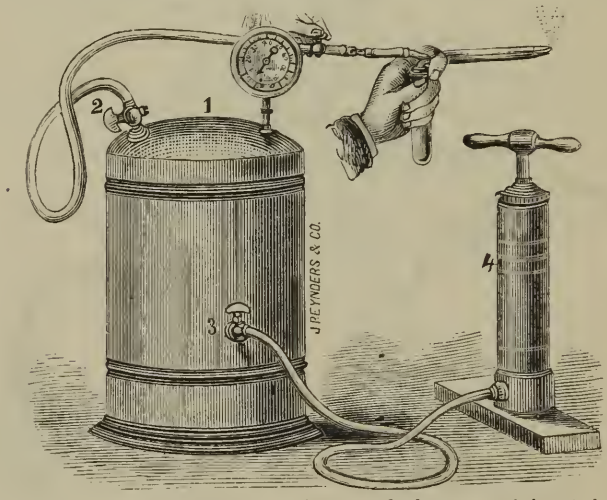

FIG. 21.—Sass air pump, receiver, and glass atomizing tubes.

ber-tubing to a cylinder of compressed air, in which the amount of pressure is regulated by a gauge at the top and the air let in, or cut off at any moment by stop-cocks placed both on the cylinder near the tubing attachments, and upon the tubing itself near the atomizing tubes, have been used by me with much satisfaction. The rubber tubing from the cylinder may be made to fit to that on the glass atomizers by means of a bayonet joint. This ar-

rangement makes their adaptation ready and secure. Codman & Shurtleff, of Boston, have invented a self-closing cut-off, which may be easily connected with any tubes now in use (fig. 22). It is of form and size to adapt it to be conveniently held in the hand together with a vial of medicament and an atomizing tube. It is used in connection with a receiver of compressed air, and is formed to be conveniently and securely attached by means of a screw joint (B) to the flexible air-supplying tube (E) leading therefrom on the one hand, and on the other to any of the atomizing tubes (A) in ordinary use.

Air admitted from the receiver is arrested by the cut-off (D) which is self-closing, or by gentle pressure of the thumb (at C) it is allowed to pass to the atomizing tube.

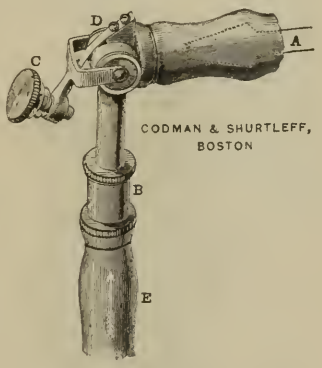

FIG. 22.—Self-closing cut-off.

The action of the cut-off is such that, while the atomizing tube may be directed with definiteness, atomized fluid may on the instant be made to flow or to cease, and may also be regulated in force and in volume with the utmost nicety and convenience. It is said by the inventors, Codman & Shurtleff, of Boston, that some of the most valuable features of the cut-off have been overlooked or omitted in all of its numerous imitations.

Whilst advising the employment of sprays, under certain circumstances, in the treatment of catarrhal inflammations of the nose, I am not willing to do so unconditionally. In regard to their temperature, degree of strength, frequency of application, I shall detail my opinion further on. But in this place, I would merely emphasize the fact that, as a general rule,

it should be understood and accepted that watery sprays are not curative in their action when introduced into the nasal cavities, unless made according to well-established rational formulæ. And in the great majority of instances, when employed in the curative treatment of nasal inflammations, they should be made use of notably to do away with two conditions.

1. The condition in which there is a marked and constantly recurrent tendency to the formation and lodgment of hard masses of inspissated mucus in some portion of these cavities, and which cannot be removed by the simple use of a handkerchief.

FIG. 23.—Mackenzie's steam inhaler.

2. The condition characterized by bad breath, in which sprays containing carbolic and salicylic acids, Condy's fluid, etc., are most effectual temporary methods of treatment to allay or dissipate this most distressing symptom. So soon as either of the above conditions has disappeared completely, I am of opinion that just so soon all medication by sprays should be stopped. This opinion applies with special force to all cases of fetid breath in which the presence of hardened crusts is not discoverable and probably does not exist.

3. *Inhaling Apparatus.*—The most perfect instrument for inhaling vapors is that known as the eclectic inhaler of Dr. Morell Mackenzie, of London. This inhaler (fig. 23) may be used for steam inhalations, cold inhalations, and dry inhalations,

and adapted to the nose by simply changing the form of the piece at the distal extremity of the flexible tube. When steam is inhaled, it is usually impregnated with some volatile substance. The temperature of the water placed in the vase of an inhaler of this kind should be about 150° F., and the inhalation carried on slowly from ten to fifteen minutes, and repeated in one hour or two if benefit is derived from it. A less expensive and simpler form of steam-inhaler is Hunter's (fig. 24), to which may also

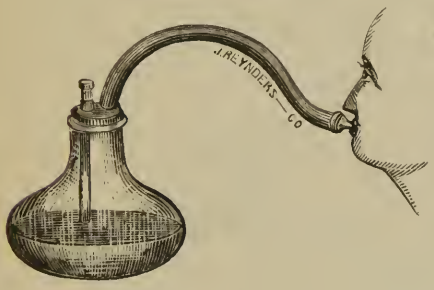

FIG. 24.—Hunter's inhaler.

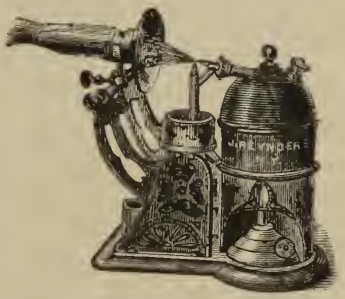

FIG. 25.—Steam atomizer (after the principle of Siegle.

be attached a suitable nozzle for inhalations through the nose. When the medicated fluid is atomized by means of and impregnated with steam, according to Siegle's principle (fig. 25), it acts very much like a vapor inhalation. In order to use this form of inhaler in the treatment of nasal inflammations, it is essential to have fitted to it a special glass shield for directing the medicated steam properly. Steam, or warm atomized inhalations are only of real service in cases of acute coryza, or in old catarrhal cases, when the nasal mucous membrane is dry and irritable. In other forms they exercise no evident beneficial effects, and are apt to increase the quantity of secretions. Cold medicated aqueous inhalations are taken at about the ambient temperature, and are indicated when hot inhalations cause headache and faintness. They should be double the strength of hot

vapor inhalations. Dry cold inhalations of volatile matters have rendered me good service in old catarrhal affections of the nasal fossæ, and when the secretion is excessive, they diminish it in a

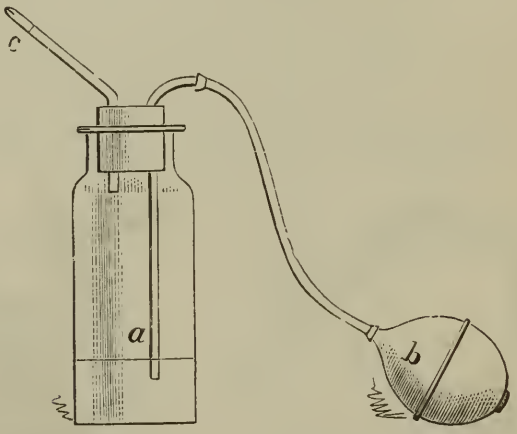

FIG. 26.—Apparatus for injecting vapor into the nasal passages (Smith).

notable degree. The apparatus of Smith (fig. 26), or Buttles (fig. 27), may be employed with advantage in this latter method

FIG. 27.—Buttles' nasal inhaler.

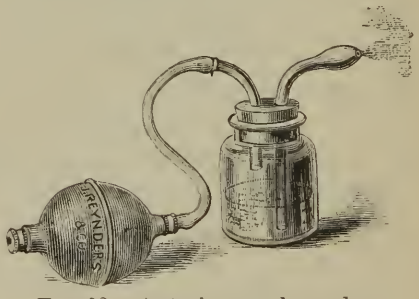

FIG. 28.—Anterior nasal powder-blower (Smith).

of inhalation. Dry hot inhalations, in which the volatile matters are vaporized by heat, are difficult of administration, and are not advised. Fuming inhalations, or inhalations derived from the

smoke of ignited papers steeped in a solution of nitrate of potash, have never been employed, so far as I know, in the treatment of inflammatory affections of the nasal fossæ. Upon occasions when spasmodic contraction of the bronchial tubes is evidently under the dependence of infiltration of the soft tissues covering the turbinated bones, their use would be indicated.

4. *Powder-Blowers.*—One of the most generally useful is a form (fig. 28) for blowing powders into the anterior nasal passages, first made known to me by Dr. Andrew H. Smith, of New York. This powder-blower I have myself slightly modified for the posterior nares (fig. 29). It consists mainly of a glass

FIG. 29.—Posterior Nasal Powder-Blower.

bottle with a wide mouth, and a capacity of about two ounces. The India-rubber stopper is perforated with two holes, into each of which a bent tube of hard rubber is inserted. One of these tubes reaches nearly to the bottom of the bottle, the other merely passes through the cork. The former, at its outer extremity, is curved forward, and without change of configuration, to an

angle of 120°. The diameter of the terminal orifice of this tube should not be greater than one-eighth of an inch; otherwise an excess of powder may be thrown behind the velum when the instrument is used, and produce a most unpleasant feeling of stuffiness, which lasts one or two hours. The short tube is connected with a hand-ball by means of India-rubber tubing. One or two rapid and forcible pressures of the hand-ball suffice to force the medicated powder into the nasal passages, and cover the turbinated bones and the adjacent parts, either anteriorly or posteriorly, with a coating of it.* I also make use daily of a series of hard rubber powder-blowers, straight, or of somewhat different curves at their distal extremities, which are attached to

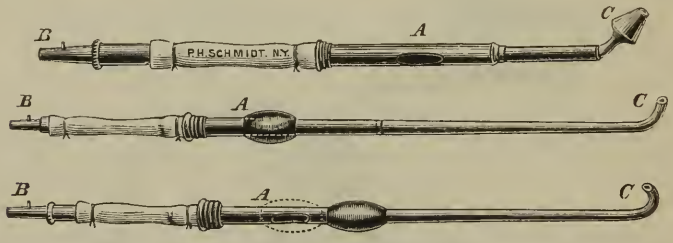

FIG. 30.—Hard rubber powder-blowing tubes for the nasal passages.

tubing connected with Sass' cylinder of condensed air, and in this way, by making use of air-pressure from five to twenty pounds, enable me to medicate most effectually, in very many instances, the anterior and posterior nasal passages. These rubber tubes, with the cups which contain the powders, are shown in the annexed figures (fig. 30). If the practitioner should not own Sass's cylinder, he may readily attach any one of my tubes to soft rubber tubing, fitted at the other end with a mouth-piece.

* The bent rubber tube, in the form of powder-blower described, should never have a movable tip at its further extremity, as this may fall off at times and occasion dangerous choking. This accident occurred to me once.

or with a hand-ball, and either blow or force the powder through the nasal passages. If a hand-ball be used, it is essential to have a poppet-valve in the hard-rubber tube, so that if the ball be squeezed more than once, the powder will not be sucked back

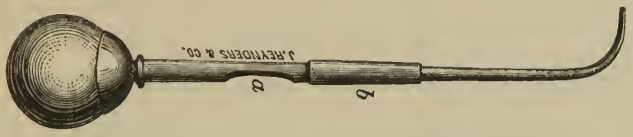

FIG. 31.—Hard rubber powder-blower, with ball.

in the tubing. Another form of hard-rubber powder-blower, with ball, may also be used for medication of the posterior nasal passages (fig. 31).

CHAPTER VI.

ANTERIOR AND POSTERIOR RHINOSCOPY.

The examination of the nasal fossæ, or rhinoscopy, may be practised in two different manners. 1. By the anterior nares (anterior rhinoscopy). 2. By the palato-pharyngeal space (posterior rhinoscopy).

1. *Anterior Rhinoscopy.*—The patient (fig. 32) is seated in a

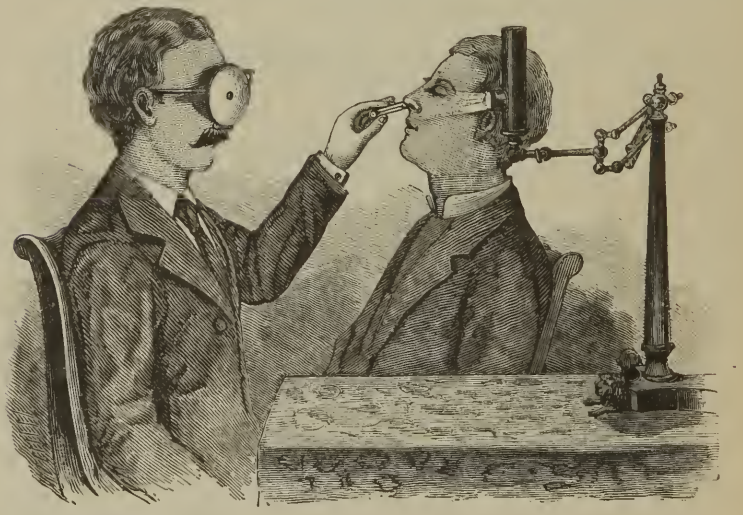

Fig. 32.—Examination of the nasal fossæ by means of the nasal speculum.

straight-back chair, in an erect position, the head being inclined backwards so as to elevate the nostrils. The lamp is on the table to the right of the operator, the flame of the lamp being about

on a level with the eyes of the patient. The reflector is worn in front of the forehead, or right eye, precisely as it is in laryngoscopy. A focus of light is concentrated by means of the head mirror directly upon the anterior portion of the nasal passage to be examined, and Goodwillie's, or another convenient form of speculum is gently introduced into the nostril with the fingers of either hand, as far back as the junction of the cartilaginous with

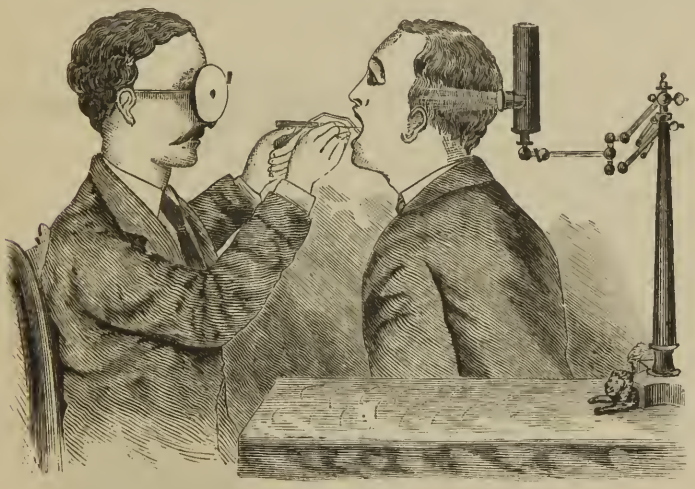

FIG. 33.—The general arrangements for posterior rhinoscopy.

the bony portion of the nose. The speculum is then allowed to expand by the elasticity of its spring, or pressed open to the desired limit by means of a small pedal, and fixed in position by a little screw. The parts of the fossa which are thus rendered visible vary with their normal conformation, and likewise according to the nature and degree of their diseased condition. Sometimes the middle and inferior turbinated bones, the middle and lower meatus, and the septum nasi are all distinctly seen for a considerable distance. Frequently the septum nasi is so much carried to the left that the passage on this side is almost completely

obstructed. In cases of considerable hypertrophy of the turbinated bones, but little else is seen than the angry, turgid anterior extremity of the middle one of the corpora cavernosa. The instances when one can recognize the post-pharyngeal wall are extremely rare. Small mirrors introduced within the nasal fossæ, for the purpose of exploring their entire superficies, as recommended by Voltolini, are rarely of any service.

2. *Posterior Rhinoscopy* (fig. 33).—The lamp is at the same

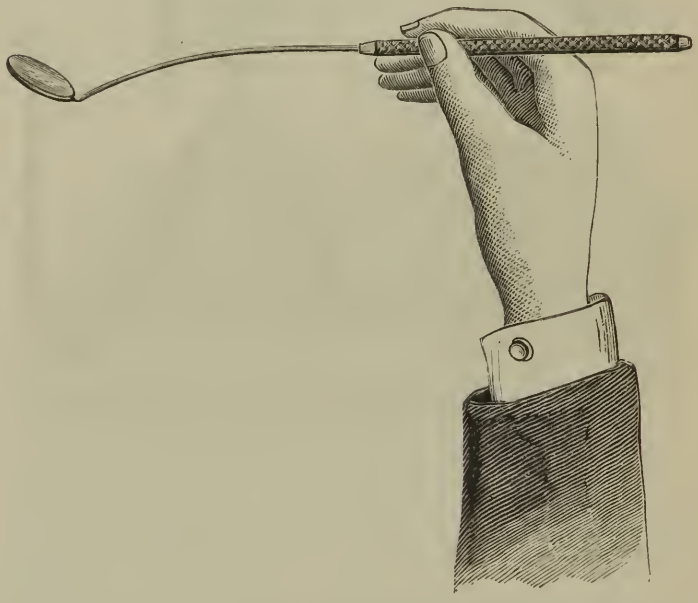

Fig. 34.—Curve of shank of mirror and position of hand necessary for rhinoscopy (Browne).

level and in the same relative position as in anterior rhinoscopy. The patient's head is inclined slightly forwards. The mouth is widely opened, the tongue depressed with a tongue spatula held in the left hand, and the focus of light reflected from the head

mirror is concentrated in the back of the throat, the centre of it resting upon the base of the uvula. The patient is now requested to breathe gently through the nose so as to allow the soft palate to fall. Before its introduction the small rhinoscopic mirror is heated by its back over the lamp, until a film which

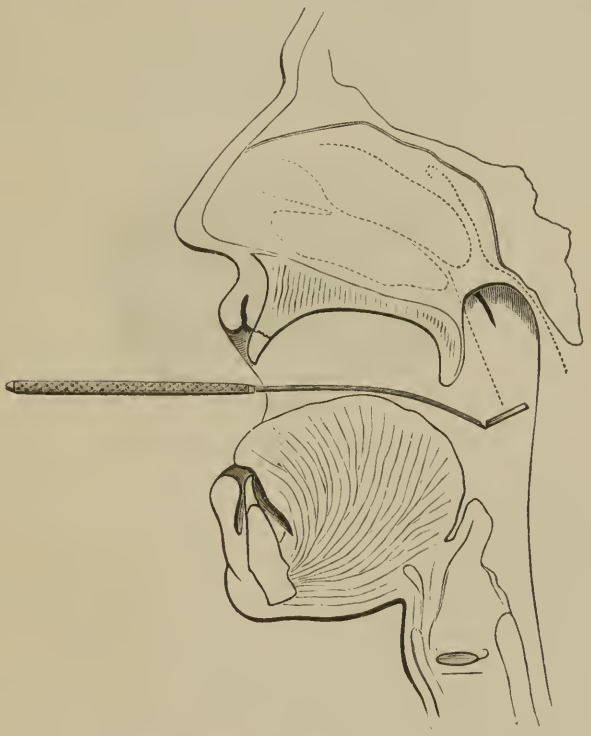

Fig. 35.—Section showing position of mirror and patient's head for obtaining a rhinoscopic image (Browne).

forms almost immediately upon its reflecting surface has become dissipated, and then applied to the skin, so as to test its degree of warmth. Then holding the small mirror in the right hand like a pen, it is carried with its back directed downwards as far pos-

teriorly as the middle of the space between the lower border of the uvula and the pharyngeal wall. The plane reflecting surface of the mirror is held at first about at an angle of 130° with the horizon (figs. 34 and 35).

After getting a correct view of the posterior border of the septum and of its lateral surfaces for a short distance within the nasal passages, the mirror is more or less inclined to the right or to the left, in order to obtain a faithful image of the turbinated bones, meatuses, and Eustachian tubes (fig. 36). By bringing the

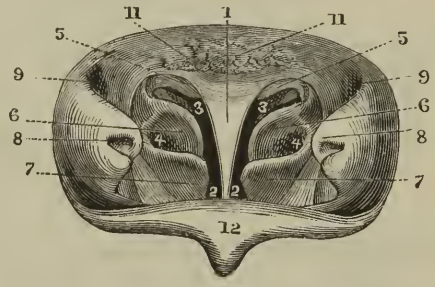

FIG. 36.—Rhinoscopic image (Cohen).

1. Vomer or nasal septum.
2. Free space of nasal passages.
3. Superior meatus.
4. Middle meatus.
5. Superior turbinated bone.
6. Middle turbinated bone.
7. Inferior turbinated bone.
8. Pharyngeal orifice of Eustachian tube.
9. Upper portion of fossa of Rosenmueller.
11. Glandular tissue at the anterior portion of the vault of the pharynx.
12. Posterior surface of the velum.

reflecting surface of the mirror almost to a horizontal direction, the vault of the pharynx can be distinctly seen; by approaching this same surface nearly to a vertical plane the state of the mucous membrane covering the soft palate and uvula can at times in part be determined. Evidently then, from what precedes

we have formed the notion, which is true, that the rhinal image is never seen in its entirety at one and the same time, but is thus composed in the mind's eye of the observer by adding one to the other a succession of accurate pictures, as it were, of different juxtaposed parts. In the above manipulations the operator can steady his hand which holds the mirror by resting the third and fourth fingers on the patient's lower jaw.

CHAPTER VII.

PROPHYLAXIS AND GENERAL REMEDIAL TREATMENT OF VARIOUS FORMS OF CORYZA.

I. PROPHYLAXIS.

In the prophylaxis of inflammatory affections of the nasal fossæ, I include attention to all habits which proceed clearly and forcibly from a due consideration of certain hygienic laws. If these habits be adopted previous to, or in anticipation of, the development of an attack of acute nasal catarrh, many such will be effectually warded off. If practised subsequent to its initial stage, in a sense they become both prophylactic and remedial, for whilst they prevent in great measure the recurrence of similar attacks, they also help to abridge the duration and violence of one which is present. I shall consider in this connection a few simple, I might say banal facts of which the practical observance, however, is all important. 1. Care of the feet. 2. Cold bathing. 3. Friction and shampooing. 4. Clothing and temperature.

1. *Care of the feet.*—They should be kept warm and dry, for certainly there is no more frequent, efficient cause of attacks of acute coryza than cold, damp or wet feet, and as acute attacks of coryza, when often repeated, lead to chronic rhinitis, and to thickening of the pituitary membrane, one of the primary sources of these latter affections, should not be ignored. In order to ward off like troubles, let men, women, and children wear habitually in the streets thick-sole shoes which are suffi-

ciently long and large to give them perfect comfort and permit the toes to move with some freedom. In the autumn and winter months, or indeed at all times when the sidewalks are cold or wet, it is particularly necessary to pay attention to this rule. Shoes should scarcely ever have thin soles for out-door wear. Even in summer it is indicated to keep the feet from becoming over-heated by almost direct contact with the hot pavements, and in order to effect it, thick-sole shoes must be worn. During the cold months of the year, if people who go to evening entertainments are called upon to observe strictly the laws of fashion, their pumps, or other form of light-sole shoe, should be covered with some kind of warm over-shoe. When there is no snow, slush, or actual rain upon the ground, *i. e.*, when the pavements are merely damp, the cork-sole shoe is the most recommendable, inasmuch as it prevents the foot from becoming damp or chilled without obliging the wearer to put on rubbers or arctics. When the side-walks are cold, but dry, a stout pair of double-sole shoes is all that is required. If there is snow upon the pavements, or if it is raining, then it is needful to wear impermeable overshoes. For supposing the feet become wet; immediately the circulation is more or less arrested, and a cold condition of the lower extremities quickly follows. If the feet are cold, the blood in part stagnates in them, in part goes elsewhere in the body to produce local congestion, and in no organ are the ultimate results more certainly effected than in the nose. Under these circumstances uneasiness and tickling of the pituitary membrane are the rule. These phenomena, moreover, are not tardy in showing themselves, but with some predisposed individuals will begin very soon after the feet have become damp or wet. Constantly recurring or persistent congestion of the nose leads sooner or later to various forms of chronic catarrhal inflammation of this organ, and infiltration of cellular and other

soft tissues is too frequently a direct consequence of it. The feet should therefore always be, if possible, in a comfortable condition, but if wet for any length of time, through necessity, let it be known that this state is not so hurtful when one is moving about as when at rest. Light woollen socks or stockings are the proper direct covering for feet in cold months of the year, unless there be some personal idiosyncrasy which makes only thick cotton ones supportable. These should always be changed for others when they are damp, and they never should be sufficiently heavy to occasion local sweating or distress. Overshoes ought to be removed as soon as the wearer enters the house and only be replaced just before leaving it. If this precaution be *not* attended to, the feet are bathed with moisture, and afterwards, whenever they are exposed to a sudden lowering of temperature, they are chilled and become the immediate source of an attack of acute coryza.

2. *Cold bathing.*—Not only are cold baths useful in that they give tone to the whole system and brace the body to the power of more active exertion, but they are also a means which, if judiciously employed, will lessen the likelihood of localized mucous congestion. From this latter stand-point they are especially indicated in the prophylaxis of attacks of coryza. By habitual bathing in cold water the functions of the skin are excited, and one is sufficiently protected in many instances against the recurrence of colds. For in our variable climate, where extremes of temperature so closely approximate, every person must be more or less frequently exposed to all the evils which result from draughts, or from cold, or excessive humidity. No matter how numerous our precautions are, people will, in spite of them all, at times take cold. Our object then should be, *not* to surround ourselves with all manner of contrivances by which climateric influences are not exercised, but rather to harden ourselves so

that they are not injuriously felt. Now *hot* or even *tepid* bathing is, I believe, one of the main causes of recurring congestion of the nasal fossæ. And can it be otherwise? Take a person of relatively feeble and lymphatic constitution, and subject him to bad hygienic influences, viz., surround him with an insufficient or vitiated supply of air, give him improper food, or cover him with badly adapted clothing, and will you not find that he gradually becomes more markedly strumous and sickly? Warm bathing is to be ranked in the same category. It is enervating and takes away from bodily vigor. The skin, it is true, is actively congested during the period of the bath, and its capillary circulation greatly augmented, but just so soon as the ambient cold air impinges again upon the cutaneous surface, either directly or through the habitual wearing apparel, the blood supply is driven with increased force (owing to the rapid contraction of the small vessels of the integument), towards the internal viscera and mucous linings which in their turn become congested, and remain so more or less *constantly*, unless by a superabundance of clothing the body is kept in an unnatural state of heat. If the temperature of the water used in bathing is as low or lower than that of the surrounding atmospheric medium, what a different physiological action takes place! A temporary shock follows immersion or the use of the sponge filled with water, after which there is a short period when the surface temperature of the body is lowered; and then a natural warmth or glow takes place, the skin is reddened, its capillary circulation is heightened, and not merely in a temporary manner, but shortly becomes so permanently, and the interior organs are relieved of an overload of blood and greatly stimulated in their several functions. No healthy individual, therefore, should omit taking in our climate a cold sponge bath upon rising each morning. The head and neck should be first wet, afterwards the arms, shoulders, and chest,

and finally the trunk and lower limbs. In this way unnecessary shock to the heart is avoided, and water of low temperature (55° –65° F.) may soon be habitually used. The tub should only be filled to the height of one or two inches. If the water reaches above the ankles the body becomes rapidly chilled. One must become accustomed by degrees to the use of a cold sponge bath, and in the beginning the water must have the chill taken off, unless it be during the summer months. A moderate warmth (80° F.), is at first most acceptable, whilst with each successive day the temperature of the bath is lowered a degree or two, until at the expiration of a fortnight, water is used with advantage and even pleasure as it flows from the faucet. As the feelings of the individual are not to be relied upon at all times, the thermometer must be employed to measure temperature accurately. The sponge bath should only last a very few moments, and then the entire surface of the body should be quickly dried. Of course, it is understood that if the constitution be a delicate one, and the reaction following the bath be slow or uncertain, the temperature of the water should not be rapidly or too considerably lowered. If there be any functional or organic disease of an organ, still greater precautions are to be used, and, in some rare instances, I believe cold baths ought to be wholly interdicted. Of course, under these circumstances the only proper judge of their employment is the family medical adviser.

3. *Friction and Shampooing.*—If friction by means of a rough Turkish bath-towel or a horse-hair flesh-brush be employed regularly and thoroughly for a few moments just before the bath, good reaction usually follows. In this way the skin is rendered smoother and more supple, capillary circulation is increased, and effete layers of epithelium got entirely rid of, whilst the mucous membranes show by degrees less tendency to become congested. In the case of delicate women and small children, energetic

shampooing (massage) with the fingers of a trained nurse is most useful. The shampooing should be carried on with gentleness at first, but afterwards with a firmer pressure and include the entire trunk and limbs. It should always proceed from the extremities towards the heart, or in the direction of the venous blood-flow. The use of some fatty or oleaginous substance of bland, unirritating nature is an excellent adjunct in carrying out the above treatment, and is especially of service where the skin is dry, or offers a slightly scaly or furfuraceous aspect, and so gives evidence of imperfect nutrition, or lack of healthy power. To show the striking results effected, in so far as increase of energy of all vital functions is concerned, I would have only to cite well-known instances of prematurely born children, in which shampooing alone worked wonders. After a few weeks, these children can be bathed with advantage (in *warm* water), and under the influence of two or three daily shampooings, increase almost visibly in health and strength. In regard to this subject of shampooing (massage) in the case of broken-down females of a specially nervous type, Dr. Weir Mitchell has placed the profession under great obligations for his thorough practical exposition of the subject.* Shampooing, properly speaking, is nothing more than a kneading process, in which each external muscle of the frame is made to react and do its work towards generating heat and building up nerve-force. Little by little the kneading process is done more thoroughly and with a greater degree of force, until, finally, the skin has everywhere augmented vitality. There are, as we know, special men and women in most of our large cities who have become experts in these practical manipulations, and who are known as making daily use of this method of cure. Such a one, when it is feasible, had best be employed.

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* Fat and Blood, and how to make them. Phila., 1877.

4. *Clothing and temperature, and hints upon taking cold, and avoidance of it.*—It is a preservative of health for almost every one in our variable climate to wear flannel undergarments in winter and summer. These should never, at any season, be heavy enough to occasion visible perspiration. There should be always a change for night wear, so that the garment worn dur ing the day may be thoroughly aired: the one worn at night must usually be of lighter texture than the flannel which is suitable for day wear. The outer clothing should be warm and comfortable, but not oppressive. If the feet are kept warm and dry, too

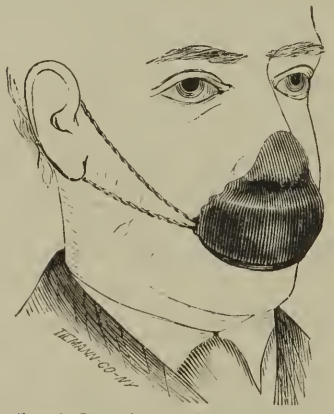

FIG. 37.—Jeffrey's Respirator for the mouth and nose.

much covering of the trunk is not, as a rule, tolerable, and can but make an individual susceptible to colds. All mufflers around the throat are absolutely bad. They never prevent colds being taken, and only render the probability of contracting them much greater. During the prevalence of high cold winds, the ears may, with advantage, be protected by means of ear-tabs, or by placing pieces of cotton in the external auditory canals. When in the open air, especially during cold or damp weather, always have the habit of breathing through the nose and keeping the

mouth closed. If a patient have an attack of acute coryza or even a severe *chronic* catarrhal inflammation of the nasal passages, a respirator covering both nose and mouth (fig. 37) could be worn with much advantage out of doors during inclement weather. Never talk in the open air if the weather be windy or damp and there be already symptoms of an incipient cold. Never under these circumstances stand in a draught, go to the register or fire-place immediately before leaving the house, or remain in the house a moment longer than is necessary with extra wraps over the body. Take a warm drink, if desired, upon entering the house after being exposed to cold or fatigue, but so far as possible make it a rule *not* to do so when obliged to expose one's self to a cold or damp atmosphere shortly after taking it. The temperature of one's sitting-room should be 66° to 68°, and rarely 70° Fah., never above the latter if the chamber be artificially heated, except in certain cases of illness. In order to prevent the air becoming too dry for health, let a basin, pitcher, or bucketful of fresh, pure water, with the surface exposed to the air, remain constantly in the bed-chamber, particularly if it be warmed with heat from a stove or furnace. Never, however, depend upon heated air from a furnace to warm a parlor, office, or bedroom unless it be unavoidable. Such a source and quality of heat is only tolerable in vestibules, halls, and corridors.

Calorifères or stoves are nearly as unpleasant and injurious as furnaces, for the heat from them irritates and dries up more or less the mucous surfaces of nose and throat, trachea, bronchi, and pulmonary alveoli. Furnace heat, in addition, permits much that is pernicious in the air supply to remain so until brought into direct contact with the lungs and absorbed. And how could it be otherwise? Is not the air that feeds them usually taken from the near level of the street, gutter, sidewalk, and sometimes from damp or filthy cellars, in which decaying, bad-smelling refuse is

constantly accumulating? Indeed I have seriously asked myself, on many occasions already, whether one-half the diseases supposed to be due to bad drainage in our houses are not rather occasioned by the conditions just referred to. An open fireplace, with wood or soft coal as fuel, is after all one of the great purifiers and ventilators of all apartments, large or small, in cold weather, and is earnestly recommended for adoption by every one who can have one. *What precedes is important to the well-being of the majority of people; in my opinion it is absolutely essential to the prophylaxis or cure of those affected with catarrhal inflammation of the nasal fossæ.*

II. ACUTE CORYZA.

Definition, Synonyms, History.—By this term is designated an acute catarrhal inflammation of the mucous membrane lining the nose and the cavities communicating with it. This mucous membrane is properly called the pituitary, or Schneiderian membrane, and its inflamed state is usually attended with discharges of fluid, watery, mucous, or muco-purulent in character. As synonymous terms with coryza, we have gravido, rhinitis, rhinorrhœa, acute nasal catarrh, or vulgarly "running at the nose" and "cold in the head." The last of these terms remains in common parlance as an historical proof of the error of the older writers on this subject, who believed the products of secretion of the inflamed nasal membrane came down from the cranial cavity. It remained for Schneider (1660) to refute this classical mistake in his famous work, "De Catarrhis." Nevertheless, amongst the ignorant the notion is still popular that nasal mucus is found in the blood of the brain. To us physicians it is to-day universally known that catarrh of the nose resembles similar inflammations elsewhere situated, with only those differences attached to it which arise from special situation and structure.

Pathological Anatomy.—According to clinical observations, the lesions of the pituitary membrane are not dissimilar with those of acute catarrh of other mucous surfaces. In regard to post-mortem conditions, it must be obvious that rarely is an opportunity offered to make accurate pathological investigations, and we have no reported statements of such researches. During life, the seat of the inflammation is principally the capillary vessels which have become engorged with blood, and occasion swelling of the mucous membrane. This tumefaction is rapidly increased by œdematous infiltration, and a quantity of colorless, salty, and very thin liquid flows from the nostrils. Later on, the secreted liquid becomes thicker and opaque, whilst the hyperæmia and swelling of the membrane diminish. It would appear as if the respiratory region of the nasal fossæ was more particularly affected than the olfactory. In a few rare cases, the exudation in the nasal passages has been of fibrinous nature, somewhat similar in appearance to what takes place in diphtheria. This form has been observed amongst newborn infants and those affected with eruptive fevers.

Symptoms.—The prodromic phenomena which mark the beginning of an attack of acute coryza are general lassitude, or sense of weariness, chilly sensations, and a notable degree of pain or weight in the forehead. The intensity of these general symptoms varies considerably with different individuals. It also depends somewhat upon the causes which have occasioned this disease. Thus the symptoms may all be of mild type and characterize a light variety of malady. Again the general symptoms may be present in an aggravated form, and what is usually an affection of little moment, becomes very severe. In these instances the pulse and respiration are both much accelerated, there is a notable rise of temperature, and the patient is confined to the house for several days with an affection of serious import.

Fortunately, this picture is overdrawn in the majority of ex-

amples, and the local symptoms are alone especially troublesome, whilst the general malaise rapidly subsides. In the beginning, the pituitary membrane is dry, stuffy, and there is little or no secretion of mucus in the nasal passages. At the same time there are local sensations of irritation, as of a small foreign body, which excite frequent attacks of sneezing. The fullness of the passages is most uncomfortable, and the efforts at first to blow the nose are wearisome and ineffectual. The dryness of the nasal fossæ in the first stage of acute coryza is variously interpreted. My own belief is that it is due to a temporary suppression of the secretion of the pituitary membrane. This conviction is not shared by those who recognize a perfectly normal condition only when there is no *mucus* upon the Schneiderian membrane and when the humid condition of the nasal passages is produced by the water of the expired breath. In a brief lapse of time an increase of nasal secretion commences. This soon becomes copious in quantity and at first is watery in appearance. Later on it possesses a saline taste and irritative qualities possibly due to the ammonia it contains. It is continually dripping from the nostrils, or occasions an attack of sneezing, followed by blowing the nose, which relieves the congested and swollen membrane for a few moments. But this relief is very temporary and the fullness of the head and difficult, obstructed nasal respiration rapidly return. The watery fluid which at first comes from the nose originates almost entirely in the moisture of the expired breath which is not taken up by the absorbents, but simply penetrates the mucous membrane until it is saturated, and when exosmosis begins constitutes the initial discharge. Afterwards when this fluid supply is exhausted, the discharge comes mainly from the contents of the blood-vessels. At a more advanced stage of the disease, the discharge from the nose contains mucus, and is thicker and less transparent. Little by little epithelial cells and white blood-cor-

puscles are mixed with the mucus, and the discharge is opaque, tenacious, and assumes a yellowish or grecnish coloration. Over the corpuscles considerable numbers of micrococci are observed, and it is to their presence that Hueter notably attributes the irritation present in coryza.

The mucus secreted in coryza probably comes from the entire mucous membrane and does not take origin in the glands, as at one time it was believed. A strong reason for this belief lies in the fact that the secretion from the nasal lobulated glands does not give the characteristic reaction of mucus with acetic acid. No doubt, therefore, that the mucus itself is but the result of degenerative changes in the effete epithelium which has been pushed off by the liquid current from the overcharged blood-vessels. Besides the ingredients mentioned, the nasal discharges may contain different organic or inorganic particles from the surrounding atmosphere, drawn in with the inspired air. Taken together these elements form a greater or less abundance of material which bathes, as it were, the nasal passages and which gives rise to those moist, snuffling sounds which are so significa tive of the presence of coryza.

The secretions from the nasal passages are at first almost devoid of odor, but later become slightly nauseous and at times positively fetid, when they have been pent up in the nasal passages during several successive hours. When the attack is almost terminated, hard crusts may form within the nostrils, either on the septum or turbinated bones, and are with difficulty expelled by blowing the nose. In certain instances it is found necessary to extract them by the finger, or suitable forceps. The swelling of the mucous membrane varies in degree, as does the amount of mucous or muco-purulent discharge. Sometimes the nasal passages are merely narrowed; frequently they are entirely occluded except after an attack of sneezing. The peculiar erectile

stroma with large vein cavities situated between the periosteum and the pituitary membrane covering the turbinated bones explains satisfactorily this considerable degree of tumefaction. Moreover, as Kohlrausch (1853) and later on Bigelow (1875) have demonstrated, it permits us to understand the great rapidity with which turgescence or collapse of membrane is produced; and why it is that gravitation in certain positions of the body, as lying on the side, will cause complete obstruction of the portion of the nasal passages situated undermost. Owing to the juxtaposition of the opposite surfaces of the nasal mucous membrane, the column of inspired air does not reach freely the olfactory membrane, even during a strong effort, and the consequence is that the sense of smell is partially lost for the while. In bad attacks and when the nasal fossæ are normally very narrow, I have known instances of complete loss of smell during several days. This condition is accompanied, as one would naturally infer, by obtuseness of the gustatory sense, in so far as it depends upon the olfactory; and many such patients affirm that their meat or drink has absolutely no flavor. Even pungent sapid substances cannot always be accurately differentiated.

The voice assumes a nasal intonation which is commonly understood to be occasioned by talking through the nose. This is not correct, but the contrary is true, viz., the return column of air is prevented from passing into and through the nasal fossæ, owing to obstruction caused by their swollen condition, and consequently the normal vibration is not given to the articulation of most syllables.

Complications.—Owing to repeated blowing of the nose and to the continual passage of irritating secretions, the skin of the nares and the upper lip becomes red and swollen, and the pain and discomfort are augmented. The catarrhal inflammation is also apt to extend in different directions and implicate the ducts and si-

nuses communicating with the nasal passages, properly speaking. Thus the ethmoid and sphenoid cavities are frequently involved and increase of headache is produced. If the pain is more marked at the root of the nose, it is significative of extension of the catarrh to the frontal sinus; if the malar region is specially sensitive, we are prone to believe the antrum of Highmore has become inflamed.

Now in this connection we shall do well to call to mind the fact that the fifth pair of cranial nerves sends many terminal filaments to the pituitary membrane, and trigeminal neuralgia in a mild form is a frequent complication of acute coryza. Search should be made, therefore, for superficial points of pain where the nerve passes out from the infra-orbital foramen and along its lines of distribution before making a diagnosis. It is not infrequent to find the inflammatory processes extending through the lachrymal ducts to the lachrymal sac and finally occasion redness and pain of the conjunctivæ. From blocking up of the tear passages epiphora is occasionally produced and irritation of the lower eyelids. If the Eustachian tubes become affected, temporary deafness is produced with noises in the ears, and more or less unpleasant sensations in the auditory canals. Nothing is more common in severe cases of acute coryza than to observe the progress of the inflammatory process into the pharynx through the post-nasal space, and from thence into the larynx and large divisions of the bronchi. In these examples we have a sort of general influenza which alone lacks the strongly marked epidemic characters of this disease to be confounded with it in nearly every particular.

The fever which, as I have said previously, is usually slight, may in such cases become high and occasion solicitude. Accompanying it we shall have, also, that general feeling of a disability to do anything, with soreness of the muscles and rigidity of the joints which marks the influence of cold upon all the soft tissues.

Notable swelling of the lymphatic glands under or behind the sterno-cleido-mastoid muscles, as a direct complication of acute coryza, must be very infrequent. It is mentioned, however, by German writers and should be sought after, especially in scrofulous subjects.

Duration and Termination.—An ordinary attack of acute coryza does not usually last more than three or four days. In exceptional cases it may last a week or more. What is more frequent is to see persons in whom several acute attacks follow each other in close succession. In these instances there is a special predisposition to colds by reason of some constitutional tendency, or the individual has been exposed to a succession of draughts or rapid changes of temperature. It should be observed that those individuals who have acquired a certain habit of catching cold do so apparently under the influence of the most trivial causes and which would not affect at all people of ordinary susceptibility to ambient atmospheric conditions. Frequently amongst such persons are found either those who are broken down in health, those who inherit a markedly lymphatic constitution, or those who even during the initial stage of an attack of coryza do not take the most ordinary precautions against exposure, or adopt any treatment, even the most simple. After months or years, some of these patients will develop a continuous coryza and are scarcely ever free from an increased amount of secretion in the nasal passages.

The consequences of this condition will be spoken of in my description of chronic coryza. The ordinary termination, however, of acute coryza in a healthy person is recovery, and when the attack has passed, no unpleasant sequelæ follow. In very rare instances acute coryza terminates in suppuration. Fatal cases have alone been recorded amongst nurslings or very old people,

owing to excessive interference, through blocking up of the nasal fossæ, with respiration and nutrition.

Etiology.—Of all mucous surfaces, the pituitary is perhaps the one which is most sensitive to atmospheric changes. Let the air rapidly become somewhat damp and cold from warm and dry, and there are many persons who will be taken with cold in the head. Such are those, particularly, whose skins act imperfectly, or who have a rheumatic tendency, or who, for one reason or another, are enfeebled in health. Again, with the majority of healthy people, exposure to a draught or the sudden chilling of a large or small portion of the cutaneous surface, especially of the extremities when the body is perspiring, is apt to bring on an attack of acute coryza. It is a remarkable fact that acute coryza may be occasioned by the action of an over-heated or confined and impure atmosphere. And thus we have an explanation of its frequency amongst those who live in badly ventilated apartments heated by means of furnaces. Attacks of acute coryza, of obstinate character, are directly due to inhalation of irritating vapors and gases, of dusts and different kinds of powders. Those who work in fac tories, chemists, pharmacists, tobacconists, etc., are especially exposed to these efficient causes of disease. Amongst those who have a particular idiosyncrasy in regard to these injurious inhalations, an attack of asthma is sometimes produced. In these cases, Trousseau has remarked, and I believe with good reason, the close relationship existing between asthma and coryza. There are indeed instances in which the *commencement* of the asthmatic attack is marked by the symptoms of coryza, and occasionally paroxysmal sneezing constitutes the chief diagnostic feature of them. In my own experience I have had occasion to notice the decided predisposition of tobacconists to acute coryza, and have found their attacks unusually prolonged and difficult of cure. The great sensitiveness of most people to the vapor of iodine is

well known and few can breathe it without having decided irritation of the nasal mucous membrane. In exceptional instances, the same causes which are accountable for follicular disease of the pharynx may also cause repeated attacks of acute coryza.

Acute coryza may be encountered among the initial affections which point to the development of an acute general disease of epidemic nature, influenza, measles, etc. And under these circumstances the coryza is without doubt contagious, just as the disease of which it forms an integral part, is. When it exists, however, as a sporadic affection, without being followed by ulterior symptoms, is it then contagious ? Many familiar facts indicate the probability of its being so. Persons in the same family are often attacked by it successively, not simultaneously, and when no other sufficient reason can be assigned for its presence. The use of the same handkerchief, the contact of faces, as in kissing, has been known to communicate it. Fraenkel cites the case of bridegrooms who have taken it from their brides. There are, besides, two facts which show its possibility, and on this account should be mentioned. The first is the transmission of gonorrhœal virus to the nasal membrane; the second, the coryza taken by children during delivery, and which is obviously occasioned by the contact of irritating fluids which come from the mother's exterior genitals. Inasmuch as these two fluids are not believed at the present time to be of specific nature, there is no evidence to prove that they are more likely to carry contagion than the secretions from surfaces affected with a catarrhal inflammation. We know, however, that catarrhal secretions from mucous surfaces other than the pituitary, and especially at the purulent stage, are contagious.

It is also certain that those from the nasal passages do not differ in a marked degree from them. The conclusion seems almost forced, therefore, that the products of catarrhal inflammation of

the Schneiderian membrane are likewise contagious. And yet the power of the "contagium" must vary in accordance with the stages of the disease, or the susceptibility of different persons to its influence must be very different, under various conditions of health, or of ambient atmosphere; for hitherto all attempts at inoculation have signally failed. Numerous experiments have already been tried so as to convey an acute coryza directly from a patient to a perfectly healthy individual, by placing morbid products of secretion upon, or introducing them into, pituitary membranes wholly unaffected. In no instance have the attempts been crowned with success, and although they were made *apparently* under the most favorable circumstances.

Such results, however, are far from conclusive in view of the other facts which precede, and will doutless remain so until the analysis of the air, at particular times, shall make manifest the real noxa of this as of many other acute diseases.

III. VARIETIES OF ACUTE CORYZA.

(*a.*) *Simple Coryza of Infancy.*—In very young infants affected with this disease, symptoms are present which do not exist in older persons. These originate from the narrowness of their nasal fossæ, and from their manner of taking nourishment. So soon as these passages are at all inflamed, they become rapidly almost impervious to air. The result is, the infant holds its mouth open and its breathing is noisy and difficult. This is not all; for if the infant attempt to take the breast, it will suck for a few moments and then relax its hold, and commence to cry and show other symptoms of anger or distress.

The reason is apparent, viz., the mouth being closed during the effort of suction, it has no way by which it can breathe. If the attack of coryza is not rapidly ameliorated, the infant loses flesh and strength, and in occasional instances the prognosis has been

grave. The presence of distressing symptoms, and the possibility of a serious result, should make us careful to adopt proper therapeutical measures and to give attention to the method of the child's alimentation.

(*b.*) *Specific Coryza of Infancy.*—An attack of acute coryza in infants is frequently due to the poison of syphilis. Such cases in the begining resemble entirely the simple acute form, and it would be erroneous to believe that *signs are* always *present* which reveal their true nature. In fact, the negative results obtained with anticatarrhal treatment will alone at times make us suspicious. If we then make use of mercurials, we shall recognize, after a brief period, notable beneficial effects. Careful attention, therefore, is particularly necessary in like instances.

(*c.*) *Coryza of Fevers.*—Acute coryza is usually present in the initial stage of measles, exanthematous typhus, and influenza. In other infectious diseases it is relatively infrequent.

Diphtheritic coryza and the coryza of glanders, although acute, are for obvious reasons not considered in this work. All practitioners are familiar with an acute coryza which is frequently occasioned by the internal use of iodide of potash. Attacks of similar inflammation are occasioned by other mineral poisons.

Treatment.—The proper treatment of an acute attack of coryza of the simple variety in an adult will depend upon the stage at which it has arrived and upon the presence or absence of symptoms of constitutional reaction. But before speaking of the *abortive* and *curative* treatment, it is timely to refer to the prophylaxis of this affection. In a general way I would here refer my readers to the counsel given at pages 44–48 of this work. But particular attention should, also, be directed to special facts which are true of attacks of acute coryza in different individuals. Whilst one person will take a cold in the head from slight exposure to variations of heat, cold and moisture, other persons will resist all these agencies, usually

productive of acute coryza, with great impunity. Certain individuals get their attacks of coryza when they have been exposed to the inhalation of dusts, noxious vapors, or an ill ventilated atmosphere. I have known the mucous lining of the nose to become congested and cold in the head to be contracted in a room heated by a furnace, in which there was no perceptible draught and the temperature was elevated and nearly constant. At times acute coryza attacks those who are merely overworked, or prevented from taking sufficient rest at night. Each one can carefully sift the many, and often quite singular efficient causes of an attack of acute coryza. All of those found to be thus influential in producing bad effects are to be rigorously avoided, as well as the more ordinary and well-known causes, such as wet and cold feet, draughts of air, prolonged exposure with insufficient clothing, going out of doors without a covering for the head, etc.

Abortive Treatment.—I know of none that can always be relied upon. The one which has in my experience proved the most trustworthy is the following. Whenever an adult is conscious of having taken a cold in the head, as indicated by the first uncomfortable sensations in the nasal passages, followed by one or more efforts of sneezing, let him commence to take one or other of the accompanying prescriptions regularly.

1. ℞ Sp. ammoniæ aromat..... ʒ iss.
S. One teaspoonful in sweetened water (ʒ i.– ʒ iss.) every two hours.
2. ℞ Ammonii carb.,
Liq. morphiæ sulph. (U. S.).....āā ʒ i.
Mist. amygdalæ.....ad ʒ iij.
M. S. A teaspoonful in water (ʒ i.– ʒ iss.) every hour during 6 hours and afterwards every hour and a half.

For the morphine in the last prescription small doses of the tincture of aconite root may be substituted, with good effects, whenever there are evident febrile symptoms coming on, and the

pulse is full and strong. From $\frac{1}{8}$ to $\frac{1}{4}$ of a drop to each dose of the above mixture is the proper amount to be given. According to Phillips (Materia Medica, New York, 1879, p. 156), a few drops of the tincture of Euphrasia officinalis (eyebright) taken at the beginning of an attack of acute coryza, and repeated every two or three hours, will often *abort* it. This he knows "by personal experience." The tincture should be taken in a wineglass of water. In the way of local applications to the inflamed mucous lining, I know of nothing more recommendable than the following formula.

℞ Pulv. fol. belladonnæ.....gr. xx.
Pulv. morphiæ sulph.....gr. ij.
Pulv. gum acaciæ.....ad ʒ ss.
M. S. Use with the powder blowers for anterior and posterior nares.

This powder should be blown through the nose both anteriorly and posteriorly, so as to coat over the mucous membrane lining the nasal passages, very thoroughly. It causes little or no irritation, and in fact soothes the membrane evidently in many instances. Its most noticeable action, however, is to diminish the hyperæmiated or congested condition of the interior of the nose, so as to permit freer passage of the inspired and expired current of air. This it does doubtless by contracting the small blood-vessels and lessening the amount of watery fluid which exudes from them into the cellular structure. Besides, all three agents, belladonna, morphine, and gum, are decidedly antiphlogistic in their action upon the inflamed pituitary. The use of this powder I owe to the teaching of Gueneau de Mussy, of Paris, as I do that of the carbonate of ammonia mixture to Dobell, of London. The powder blowers here referred to (figs. 28 and 29) are those which will be found most serviceable by the general practitioner, and in those numerous instances in which the specialist takes charge of his patient at his own home and not at the physician's office.

For the use of my hard rubber powder blowers (fig. 30) attached to Sass' condenser, I refer to page 163, where this treatment of post-nasal catarrh is described. In those instances in which the attack of acute coryza has become thoroughly established, I have not found thus far any remedy which can arrest its progress and we are then obliged to adopt

Curative Treatment.—If the attack of coryza be accompanied, as it sometimes is, with some febrile reaction accompanying or following upon chilly or creepy sensations and a general condition of malaise, the time-honored treatment of a full dose of some opiate at bed-time, followed by a tolerably active purge in the morning, is reliable as a method of partial relief from the distressing symptoms. Abundant diaphoresis is thus produced, and an active flux from the bowels, both of which relieve, in a measure, the congested and swollen pituitary membrane. In my own experience, however, I have found it preferable in these instances to give the first night a full dose of some simple diuretic and diaphoretic medicine which acts upon the skin and kidneys, but is not followed by almost absolute loss of appetite and great dullness of intellect the next morning.

The formula recommended is

℞ Liq. ammonii acetatis..... ℥ ss.–℥ i.
Sp. ætheris nitrosi..... ..... ʒ ss.–ʒ i.
M. S. To be taken in a tumblerful of water at bed-time.

The patient should cover himself with one or more blankets according to the season, and so as to feel warm enough to promote active perspiration. Toward morning and before rising, the extra coverings should be removed and the patient allow himself to cool slowly before rising. Once out of bed he should dress rapidly, and it is of course essential, if it be winter time, that the room be artificially warmed by an open fire. The following day

the ammonia mixture already mentioned may be taken with decided advantage, or the following formula.

℞ Potass. citratis,
Syrupi ipecac.,
Tinct. opii camph.....āā ʒ ij.
Syrupi acaciæ .....ʒ i.
Aquæ.....ad ʒ iij.
M. S. A teaspoonful every hour and a half or two hours.

It is necessary to remain in the house for at least twenty-four hours, especially if the weather be at all cold, damp, or windy. If, on the contrary, it be warm and pleasant, a short, brisk walk in the sun may afford sensible relief to the swollen pituitary membrane. Whenever the diuretic mixture has not made the patient feel better the following morning, and there is still fever, some cough, and the patient can determine to be quiet in bed during the forenoon, it is advisable to take an active purge. The neutral salts are here particularly efficient, and we may give them in their natural combinations such as they are found in Pullna, Hunyàdi Jänos, or Friedrichshall waters, of each of which a tumblerful or more may be taken in the early morning, according to their varying strength, and to the facility with which the bowels of each one are affected. As a substitute for these waters the following formula is serviceable.

℞ Magnesii sulph.....ʒ ss.–ʒ i.
Magnesii carb.....ʒ ss.
Syrupi limonis.....ʒ ss.
Aq. menth. piperitæ.....ad ʒ ij.
M. S. To be taken as a dose.*

Amongst local applications the following are useful: externally over the bridge of the nose the application of some fatty or

* If a pill is preferred, two triplex pills according to the formula of the late Dr. Francis, or three compound cathartic pills of our pharmacopœia, are suitable preparations to be given.

other emollient substance, such as cold cream, suet, sweet oil, or vaseline.

Internally, as a local application to the mucous membrane itself, the same substances may be applied by means of a camel's-hair brush (and of these vaseline is the best), or Ferrier's powder, of which the formula is here given, may be thrown into the anterior nares several times a day, from the powder blowers already described (fig. 28).

Ferrier's Snuff.

℞ Morph. sulphatis.....gr. i.
Bismuthi subnitratis.....ʒ iij.
Pulv. acaciæ.....ʒ i.
M. S. Use by insufflation.

This powder has not in my practice effected what it has done in Dr. Ferrier's, viz., abort an attack of acute coryza. Nevertheless, it is a mild, slightly astringent, and soothing application to the inflamed membrane, and as such I recommend it. Dr. Ferrier, it is true, advises his patients to make use of it every hour during twenty-four successive hours, and to do this faithfully may possibly be the necessary price of a rapid and effectual cure before the coryza has become master of the situation.

But few patients, I believe, have that faith or laudable obstinacy which will make them fully carry out his directions, and the great difficulty in the employment of this simple remedy, as in fact of all others, for the rapid effectual cure of a cold in the head, consists in the scepticism of individuals who, *not believing absolutely* in an abortive plan, consider that this affection must, to a great degree, be permitted to run its usual course, or who, on the other hand, will persist in affirming that the remedies are worse than the disease. Before leaving this subject, I feel the obligation of referring to a certain number of remedies, which have become almost household panaceas for the relief of a cold in

the head, or else have captivated certain sanguine members of our profession, who have extolled immeasurably their specific and wonderful action. Amongst the former I would mention, steaming the head and a hot mustard foot-bath. The former is sometimes useful in its effects, but is an extremely unpleasant operation to go through with; the latter is a good adjunct of any method of treatment and will somewhat relieve the engorged mucous lining, and promote more active elimination of water through the integument. Ten drops of spirits of camphor upon a small lump of sugar, taken internally and repeated every fifteen or twenty minutes until several doses are taken, is occasionally useful and relieves the distressing obstruction of the nasal passages for a time. In the same way, inspiring the vapor occasionally from spirits of hartshorn, or ordinary smelling salts, or tincture of iodine, or even the spirits of camphor itself, will relieve the patient for a short time. The smelling salts are particularly useful in arresting the tendency to sneeze, if applied to the nostrils immediately upon the first desire to do so. All these remedies act in nearly the same manner: they produce some irritation of the pituitary at first, and upon this irritation being sensibly felt, the mucous membrane exudes a large quantity of watery fluid, which of course makes the passage way through the nasal passages more open and freer for the while. But the after-effects are often more prejudicial than useful, for if any one of them be employed too great a length of time, it occasions slight additional irritation which only causes the mucous membrane to become more swollen than previously. Glycerine has been topically applied to the interior of the nose, by means of a camel's-hair brush, with the hope that it would afford much benefit to the patient. This it is thought it would do on account of its supposed healing properties, and also because of its well-known strong affinity for water.

Unfortunately, much of the commercial glycerine is impure,

contains a slight quantity of sulphuric acid, owing to imperfect methods of manufacture, and when employed in its undiluted strength, as a local application to sensitive parts, causes considerable pain and is certainly a remedy of little or no value against acute coryza. The remedy of "Brand" of Vienna, is no more worthy of confidence than those which precede, but as it has been extensively quoted in contemporary medical periodicals it may be here cited.

℞ Acidi carbolici,
Liq. ammonii fort.....āā fl. ʒ v.
Alcoholis.....fl. ʒ ij.
M. Keep in a dark place, or a tinted glass-bottle.

A few drops of this remedy should be poured on a small cone made of blotting paper and the vapor inhaled so long as it rises. Its use may be repeated, if found beneficial, every two or three hours. The eyes should be kept shut, for fear lest the irritating vapors from this mixture might cause the tears to flow.

Many persons have great confidence in the internal employment of a full dose of the sulphate of quinine in arresting an attack of coryza, or, at all events, of lessening its unpleasant features and diminishing its duration. Undoubtedly it at times is useful and in most cases is free from ill effects. It acts most probably by contracting the small vessels of the nose, and thus makes the passages freer. In malarial cases, it may have some specific effect against the attack itself, which would appear then to be dependent in a great measure upon miasmatic poisoning. Whenever there is concomitant disease of the middle ear, with some or great impairment of audition, I would advise strongly against the use of quinine internally.

Dr. D. B. St. John Roosa has shown manifestly to all those who believe in his skill and accuracy of observation that the sulphate of quinine congests the membranæ tympani in these cases,

and carries further injurious effects to an already diseased organ. Arsenic is then the proper remedy to employ, and I have reason to believe that five to ten drops of the liq. potass. arsenitis in water, repeated every eight hours, for two or three doses, may do much good to an incipient malarial cold of the head. The tincture of nux vomica—another remedy first vaunted by the homœopaths in the treatment of coryza—I have not found of the slightest use in the acute form of this disease. If the sulphate of quinine cause dizziness, noises in the head, or tinnitus aurium, this difficulty may be successfully obviated by the addition to each dose of ʒ ss. of Fothergill's solution of hydrobromic acid, or by substituting for it an equal dose of the now fashionable dextro-quinine. Cinchonidia has not the same effects, and further is apt to occasion nausea and much stomachal distress.

Many writers advise the use of the vapor or hot-air bath as an efficient means of treating acute coryza and other colds in their incipient stage. Of the two, I would prefer the Russian bath, because the steam itself has a local emollient effect upon the inflamed pituitary. But I must enter my veto against its general use. Indiscriminate employment of a remedy of this kind for a cold in the head is more productive of injurious results than good. Doubtless if a patient go to the Russian or Turkish bath at the time of day when there are few or no bathers, and is attended to just so soon as he feels he has been subjected to the heated vapor, or dry air, a sufficient length of time, he may and does at times derive benefit from it. But frequently one is obliged to wait beyond this time of advantage in the hot rooms. The shampooing is imperfectly and hurriedly done, and the patient is unable to remain well covered up a sufficient length of time in the cooling-room to obviate all danger of catching a fresh cold when he goes again into the open air.

Moreover, is it altogether rational when one takes cold during the inclement period of the year, to go from such an experience as one such bath gives into the cold, damp, or windy atmosphere outside? In order to avoid probable and greater trouble, one should at least place over the nose and mouth a respirator, and cover one's self with an additional or heavier coat, before leaving the bathing establishment, and then walk rapidly home, not again to leave a warm room for at least several hours. If the vapor or hot-air bath could be taken conveniently in one's own house, it would of course be free from the drawback just mentioned, and when it can, it should be there given. A word still of counsel, as this habit of steam and hot-air bathing has entered so much into the men of the world's treatment of cold in the head. Let men past forty years of age be fully aware that they are so old usually as are their arteries, and if they have lived freely and drunk their sherry and champagne almost every day at dinner for many years, their arteries are as likely as not to have undergone atheromatous changes. If now they take Russian or Turkish baths, they are exposing themselves to great risks, simply because undue tension is caused in the cerebral circulation, especially upon first entering the hot room, and before the skin perspires and the internal pressure upon vascular walls, situated elsewhere, has time to equalize and accommodate itself. With some persons this period undoubtedly lasts longer and is therefore more prejudical than with others, because their skin does not perspire so soon nor ever as freely. To these especially I give the warning to stay away from these baths. If any one takes the *hot*-air bath, whose skin does not act easily, I would recommend that he should be anointed with some oleaginous substance before entering. This practice will cause him to perspire sooner and more profusely. Why it facilitates this function of the skin I do not know, but of the fact I have had cognizance on several occasions, notably in my treat-

ment of Bright's disease of the kidneys. In the treatment of the acute coryza of infants at the breast, I have several times found the greatest satisfaction from the use of powders thrown into their nasal passages anteriorly, by means of the powder blower. Finely powdered white sugar may be employed, as recommended by Brown-Séquard, or equal parts of finely pulverized white sugar and camphor, as it has been made known to the readers of the *New York Medical Journal* by Dr. E. C. Mann, of New York. I have rendered the powder of Dr. Mann still more efficient by the addition of powdered tannin, in the proportion of grs. xl. to ʒ i., to one ounce of the mixture of camphor and sugar. One or two applications of this powder will enable an infant who before could not sleep at all, owing to the distress of breathing, to sleep almost quietly and without so much choking, due to the mucus falling back from the nasal passages into the throat, whilst in the recumbent position. Another very great advantage to be gained by a thorough application of this powder is the power which it gives to the infant by opening its nasal passages to suck its mother's breast, or take the feeding bottle without being obliged to let go its hold with a distressing cry every few minutes. To judge of the value of this method of treatment, it should be tried, and I am convinced it will then become habitual amongst practitioners. The use of ointments or glycerites applied with a camel's-hair brush is not nearly so efficient as the employment of powders, because they do not reach all the parts involved in the inflammatory processus, and only render a very incomplete service. If there be present a syphilitic taint, the "snuffles" will continue in spite of local or general treatment, and so soon as we have reason to suspect its existence, small doses of hydrarg. cum cretâ (grs. ij–iij.) or according to the age of the child, given daily for several days or weeks, are to be insisted upon. If iodide of potash be given, it should be in extremely small doses,

certainly not more than $\frac{1}{4}$ to $\frac{1}{2}$ gr. three times in the twenty-four hours. It should be combined with small doses of bichloride of mercury (gr. $\frac{1}{120}$), or given with a few drops of Hoffmann's anodyne in a little syrup of orange and water. So reliable an observer as J. Solis Cohen, of Philadelphia, speaks in the following manner of the use of chloroform by inhalation to abort an attack of acute coryza. "The inhalation of chloroform to the induction of anæsthesia, administered after the patient has been put into bed, will often be found adequate to abort a cold by its relaxing influence upon the structures which are in a state of tension." Dr. Cohen wisely draws attention, however, to the responsibility of the physician in prescribing this remedy, which is in some respects dangerous and should only be employed "in skilful and careful hands." If the upper lip becomes abraded from the constant contact of acrid discharges, it may be anointed with vaseline. Linen handkerchiefs must take the place of those in cotton or silk, and even these ought to be changed frequently, during the march of the disease. If one is compelled to go into the open air when it is cold, during an attack of coryza, it is wise to protect the ears by some outer covering, as it prevents, in a certain degree, the coryza from extending itself into the pharynx, and still further along the respiratory *tract*.

IV. CHRONIC CORYZA.

By chronic coryza of the simple variety I understand the chronic inflammation of the mucous membrane lining the nasal passages as far back as the posterior border of the nasal septum, which is accompanied with an increase or diminution of the products of secretion and with some alteration in their physical characters. This inflammatory condition is not accompanied with ulcerations, and it is the absence of *ulcerations* in which I find the main distinguishing feature between it and so-called fetid or *ulcerous*

coryza. It may or may not be accompanied with a certain amount of hypertrophy of the mucous membrane and submucous layer covering the turbinated bones. When the infiltration is slight, it gives rise to no very well-marked symptoms of stoppage in nasal respiration; when it is considerable, we have the symptoms from obstruction which principally characterize the so-called hypertrophy of the turbinated bones, to the consideration of which affection I shall devote a separate chapter.

Of many synonymous expressions, such as chronic nasal catarrh, chronic rhinorrhœa, coryza chronica, etc., I prefer the term employed above.

Etiology.—Chronic coryza may be the evident and direct consequence of repeated attacks of acute coryza, in an individual otherwise in perfect health. Frequently, however, it becomes manifest by degrees, is slow but sure in its progressive stage, and is not apparently occasioned by previous attacks of acute coryza. Whenever there is such relationship between it and the acute form, it is specially observed amongst persons who have persistently neglected ordinary care and treatment in bringing the acute affection to a rapid and favorable termination. It is undoubtedly an affection which attacks children with extreme facility, and amongst the children of the poor is brought on by inattention to simple sanitary rules and imperfect nutrition. With them it is by no means necessarily dependent upon a constitutional taint of syphilis or scrofula, as is often wrongly inferred. Whilst this statement is true, I do not wish to ignore the fact that these blood poisons are at times an efficient cause of many of the symptoms observed. Amongst adults, diathetic conditions should not be lost sight of, and the patient's history, after careful inquiry, will often reveal the presence of syphilis or struma, or what is quite as frequent, herpetism.

Certain accidental causes may lead to the production of chronic

coryza, if often repeated. In this category I place damp or wet feet, in connection with which perspiration is suppressed. Trades in which irritating vapors or dusts are breathed more or less constantly, are an efficient cause of chronic coryza; such are in my experience those of carpenter, tobacconist, workers in carpet factories, woollen factories, machine shops and chemical works, etc. In these latter the breathing of ammonia and other irritating vapors is the determining cause. Chronic coryza has been caused, it is said, by the reflex irritation from a decayed tooth: by evulsion of the affected tooth the coryza was cured.

Pathological Anatomy.—When an examination is made of the pituitary membrane by means of the rhinoscope, we ordinarily recognize that the nasal passages are red, angry looking, slightly humid and somewhat swollen; sometimes, however, they are paler than usual, with a dry aspect, and permit, by reason of a previous atrophic processus, a more thorough exploration of these passages than in a normal state. At times the membrane covering the septum and turbinated bones is decidedly granular or velvety. The redness, which is occasionally very deep in color, is not always so; nor is it always uniformly distributed. It may be limited in particular areas and parts, and in the immediate vicinity may to a very rigid examination with the naked eye seem perfectly healthy.

Upon expansion of the alæ by a nasal speculum, we frequently cause blood to ooze from the inflamed membrane. The special point from which this blood starts is about the middle portion of the line of junction of the cartilaginous with the bony septum of the nose. There we can often see an excoriated appearance of mucous membrane which is due to a habit on the part of the patient of scratching this surface with his nail, in order to detach any hardened crusts of mucus which have deposited there. *In more than one instance I have seen perforation of the nasal septum thus produced.* In a few very rare cases, however, there

are very visible though superficial erosions of the pituitary membrane situated about the orifices of the glands, both upon the septum and the turbinated bones, and which are evidently a consequence of prolonged catarrhal inflammation; possibly, if our means of examination were improved, many such erosions would frequently be found in certain hidden folds of the membrane over deep-seated portions of the nasal fossæ.

The bleeding from the abraded surface is usually slight and stops after a few moments when the speculum is withdrawn. On a few occasions I have known it to be the source of very obstinate nasal hemorrhages. If we use the probe upon the nasal mucous membrane in its atrophic state, we shall find it indurated. If the membrane be turgescent and infiltrated, the application of the probe to different points gives an elastic and rather soft sensation. The latter condition is usually more marked upon the inferior turbinated bones than elsewhere. Whilst the mucous membrane of the alæ of the nostrils is at times much thickened and becomes rather prominent, so as to occlude the nostrils notably, I have rarely met a case in which confusion could arise as to its nature, if a careful examination of the parts be made. The confusion between this appearance and that of morbid growths which has been made by some observers, should rarely if ever occur. In fact, I do not remember to have seen any warty or polypous growths, either in this region or on the floor of the nasal fossæ posteriorly, as have been reported by good authorities. What we do remark as a frequent accompaniment of chronic nasal catarrh in children is an eczematous eruption of the nares.

At an advanced stage of this affection, these orifices are almost or entirely closed with hard crusts, so that the little sufferer has to keep its mouth open in order to breathe.

In its simple form, chronic coryza is not acompanied with ulcerations. Of course, in a syphilitic or strumous patient, ulceration

may be found, but in these instances the diagnosis should be that of *ulcerous coryza*. The products of secretion are at first fluid, of mucous or muco-purulent nature. A portion of them is blown from the nose each time the handkerchief is used. A certain amount of this secretion collects in the median and upper portions of the nasal passages, does not readily come away when the nose is blown, and gradually hardens and attaches itself to different portions of the pituitary. If these crusts are permitted to remain several days *in situ*, their odor will become very offensive. Those which are situated near the anterior nares are often detached with the finger; those which adhere further up in the nasal passages loosen themselves after several days, owing to the glandular secretion which takes place beneath them, and are then blown out of the nose under the form of lumps of nearly solid consistence.

The crusts which are detached with the finger are almost dry and scaly. The decomposition which takes place in the pent-up secretions gives them often a nauseous odor, but nothing comparable to that which is found as a frequent accompaniment of ulcerous coryza, or indeed of the desiccated secretions which are occasionally found in follicular disease of the post-nasal space. Their appearance, form, and coloration vary. When fresh, they are light colored; but when old, they are deep gray, greenish, or brown.

Symptoms.—Chronic coryza appears under two forms, the *humid variety* and the *dry variety*. In rare instances, it is evidently more confined to one passage than the other, but one side is never entirely healthy if the other be diseased. The obstruction to nasal respiration is usually very slight. At times, however, by a passing turgescence of the parts, one or both nasal passages may become considerably occluded, so that respiration through the nose is for a time difficult. This temporary obstruction is apt to occur in damp or rainy weather, or in overheated or badly ventilated rooms.

Occasionally, one passage is so much obstructed for some minutes that it is almost impossible to breathe through it. This swelling which comes on and disappears again is due sometimes to the absorption of moisture; sometimes to the irritating effects of the respired air. The secretions from the nasal passages are augmented in quantity and now and then become quite fluid in consistence. The rule is, to find them thickened and more adherent to the mucous membrane than normal, so that they become detached with difficulty. When they are separated, they appear under the form of thick masses of yellowish or greenish coloration. If some blood-globules be mixed with them, which is often the case, they have a brownish coloration. If they have been pent up in the nasal passages during several days, they exhale an offensive odor. This is usually the case with very old forms of the disease. Before the nose can be satisfactorily examined in these instances, it must be washed out by means of a suitable spray, and the nose blown, or the secretions brought away with a camel's-hair brush or a covered cotton holder. Cases have been cited where the amount of secretion from the nose was enormous. Morgagni cites the instance of a woman in whom it was equal to one ounce in volume, every hour. There are likewise instances on record of a large quantity of albuminoid fluid issuing from the nose without any very satisfactory explanation of it. In one instance reported by Sauvages, the abundant secretion came on during the night. There were no other symptoms, and the cause was simply a passing irritation of the secretory glands of the organ, which showed itself only by this disagreeable symptom.

The term rhinorrhœa properly belongs to this condition of abnormal flux from the nasal fossæ in which the secretion is serous, or a sero-mucous fluid without acridity. The flux in fact constitutes the whole disease.

II. *The dry form of chronic coryza* is remarkable for the almost

entire absence of all secretion. The patients complain of great dryness of the fossæ, and rarely if ever have occasion to blow their noses. In these instances, the pituitary membrane is very dry and dull in appearance. There is no glistening or shining of the membrane. Here and there, but more particularly upon the septum, we notice a few small crusts which are very thin and dry and also very adherent to the membrane. In these cases the tears do not flow as well as usual by the nasal ducts, and they are oftentimes associated with obstruction which commences in the punctum of the eyelid and extends through the entire length of the tear passages. The walls of the latter are thickened by extension of the catarrhal processus from the nose, and their calibre much diminished. Thence we have the phenomenon of the tears flowing in part over the malar eminences (epiphora) and the conjunctivæ of the eyeballs and lids chronically inflamed. Proper medication of the nasal passages will at times produce marked relief of these symptoms. At times this is not sufficient, and the passage of eye-probes, or the slitting up of the punctum, followed by the repeated introduction of the probes, becomes absolutely essential as a means of cure. The respiration by the nasal passages is somewhat interfered with in the *humid* form and indicates some coaretation of the fossæ. Under these circumstances we notice some nasal twang, and the patient is somewhat annoyed by the feeling that he does not breathe so freely as he would like. In the *dry form* of the disease, the fossæ are roomy and there is not this kind of discomfort. With infants and small children, it is a familiar fact that even slight obstruction of the nasal passages will interfere considerably with their breathing and give such distress that they are unable to take a sufficient amount of nourishment. Hence it is also that we find children, thus affected, are apt to hold their mouths partially open, and have rather a stupid or vacant air.

Sometimes the expired air is very offensive ; so much so, in fact, that the near approach of persons thus affected is positively disagreeable. With certain individuals affected with chronic coryza of long standing, the bad odor of the exhaled breath proceeds evidently from the changes which take place in the secreted mucus, by reason of the constant contact of the air and moisture. Again there are instances of individuals in whom the air from their nasal fossæ takes on a bad odor simply as all of their secretions are fetid. Such persons are afflicted frequently with abundant perspiration from the hands, feet, axillæ, groins, etc., which is also intensely disagreeable in its odor to others.

At times, such a patient has his sense of olfaction so much blunted by the catarrh that he does not perceive any bad odor himself and is only conscious of its presence from some one telling him of it. Even then he is disposed to believe that it proceeds from the condition of his stomach or throat, rather than his nose. In a few rare instances, the anosmia is complete and the patient cannot tell with his eyes shut what the substances are he eats, or what are the liquids he drinks. Whenever the sense of olfaction is altered or abolished, it would seem to be occasioned by the compression of the peripheric extremities of the olfactory nerve in the mucous membrane lining the nose, owing to excessive infiltration of its different layers. When, as it sometimes occurs, a deep inspiration is made, the patient may be sensible of a disagreeable subjective smell. Believing then that this odor is sensible to those persons who are in his immediate neighborhood, he becomes morbidly sensitive to mingling amongst his fellows and will on this account shun the society of friends. This is especially true of women who are still young, and who on this account are more watchful of their *personal* attractions.

Whilst some patients do not suffer at all, in so far as pain is concerned, from chronic coryza, others have persistent frontal head-

ache, which is most distressing. This pain may also be felt over the malar bones. When it exists in these localities for some time, and with any degree of intensity, it shows quite conclusively that the catarrhal inflammation has become propagated, either to the malar or frontal sinuses, or to both. There may be implication, however, of branches of the fifth pair of cranial nerves, so that neuralgia of these nerves adds its pain to those principally due to the affection of the pituitary membrane. These pains are often much aggravated by the use of the nasal douche, and will disappear so soon as the employment of this instrument is abandoned. Chronic coryza is apt to extend itself and to be accompanied with other conditions which make it somewhat infrequent to meet it exactly in the form which I have just described and which I have done mainly for the sake of clearness.

Complications.—The complication which is most frequent is undoubtedly (so-called) hypertrophy of the turbinated bones. Whilst some thickening usually exists in the first stages of chronic coryza, it only properly takes the above name when it is much pronounced. The symptoms and treatment of this will be fully described in the next chapter. By reason of the extension of chronic coryza through the anterior nares, we may have a thickened and reddened condition of skin in their pourtour and even actual excoriation from the almost constant contact of acrid secretions. In obstinate, much prolonged cases, the upper lip becomes swollen and the glands of the neck indurated and enlarged. The chronic coryza may also become propagated into the frontal and maxillary sinuses, so that we have those significant localized pains of which we have spoken. If the inflammatory condition be propagated to the post-nasal space, we soon have some thickening and hyper-glandular secretion from the vault of the pharynx, with all those concomitant phenomena which characterize follicular disease of that region. It is no uncommon thing to find the disease

in question accompanied by enlargement of the tonsils, elongated uvula, and chronic follicular pharyngitis. Whether mucous polypi in the interior of the nasal fossæ are a cause or an effect of chronic coryza cannot always be determined. Ordinarily, however, I am disposed to believe that the chronic coryza precedes for some time the appearance of the polypi and occasions their presence by the occlusion of some of the secretory ducts of the pituitary membrane. Vegetations of the fossæ as a complication of chronic coryza are infrequent. In a syphilitic or strumous constitution, what was for a long while a simple chronic coryza may assume the *ulcerous* form and cause more or less destruction of tissues, with the horrid ever-present symptom of ozæna.

If the glandular development at the vault of the pharynx become considerable, or if a polypus be here situated, it may lead to partial or complete occlusion of one or both Eustachian tubes, and thus occasion more or less complete loss of hearing. I have already pointed out the effect of chronic coryza upon the permeability of the nasal ducts and the ultimate consequences as to producing redness of the conjunctivæ and epiphora.

In some persons the chronic coryza would appear to be the local origin of repeated attacks of erysipelas of the face. *The duration* of this form of disease is ordinarily considerable. It depends however, in great degree upon the attention given to curative measures, and also upon the method of treatment adopted. If it be permitted to run its course free from all active medication, it has no tendency to get well, but will become gradually worse and extend itself in different directions. It will be extremely likely, moreover, to produce some or all of the complications just mentioned, which of course make its march more distressing, and diminish by so much the chances of a cure. When there is no constitutional dyscrasia and when the disease exists in its simple form, without complications, we can usually effect a cure after

several months of methodic, uninterrupted treatment. Even then, if one be imprudent as regards general hygienic measures, or be exposed to sudden changes of temperature and especially to cold, damp weather and high winds, the disease will be apt to manifest itself again and requires renewed treatment.

Diagnosis.—A thorough diagnosis of the case in hand can only be made by the skilful use of the nasal speculum and the small pharyngeal mirror, with the help of a strong artificial light.

Whenever there is much accumulation of mucus, liquid or concrete, in the nasal fossæ, this must first be gotten rid of by means of a proper detergent spray and afterwards by strongly blowing the nose, or else by employing a camel's-hair brush, or mop of some kind, with which a great portion of the liquid or inspissated secretions may be taken away. The pathological appearances of the septum and turbinated bones are now visible, and a tolerably accurate diagnosis can be made. Usually speaking, if we do not recognize the presence of any ulcerations, we can pretty surely affirm that they do not exist, even in parts removed from direct inspection. This is an important fact which results from the experience of well-known observers, and which I have good reason to believe is correct. In regard to the *diagnosis of the cause*, we are sometimes at a loss, but more frequently we can affirm, from signs and symptoms observed in other organs, that syphilis or struma is present, and probably to a great extent responsible for the existence of the chronic coryza. The appearance of the pituitary membrane will itself give no distinctive signs by which we can make an accurate diagnosis of the cause of the affection. As to the existence of ulcerations, of mucous polypi, of vegetations, of hypertrophied turbinated bones, etc., we have usually but little difficulty in determining their presence or absence, when the light is sufficient, and we have introduced and dilated the nasal speculum. For the diagnosis of the other complications we are

forcibly compelled to inspect the pharynx and naso-pharyngeal space. When the other and various affections have been found either present or wanting, we can then, in considering the different symptoms properly belonging to chronic coryza, convince ourselves readily whether or not it exists, and also what is the stage and probable gravity of the disease. The *prognosis* is never grave in so far as life itself is concerned. It is, however, a persistent and obstinate affection, and unless properly treated will last indefinitely. I have little doubt, in certain bad cases, that owing to the constant respiration of air made fetid by its passage over altered and decomposed secretions, the health of certain individuals is notably impaired. The appetite is at times diminished, owing to hyper and diseased secretions from the nasal fossæ which fall into the back of the throat during sleep, and are to some extent swallowed when the patient eats or drinks. The disease is especially serious in view of the alterations of smell, taste, hearing and even sight, which may follow in its wake when it persists for any great length of time. The prognosis must finally depend upon the course of medication adopted, the dyscrasic influences present, and the avoidance of those accidental exciting causes, such as wet feet and the inhalation of tobacco smoke, which are so likely to recur, unless a constant warning be held before the patient's eyes. The symptom, "bad breath" is one of the most difficult to rid the patient of permanently when it exists, and just so soon as medication is stopped will return with its primary unpleasantness, during a long period of time.

Treatment.—Whenever chronic coryza depends upon a diathetic condition, general treatment has primary importance. If scrofula be present, cod-liver oil, iron, the iodides must be given during long periods. Sulphur waters, both internally and externally, are useful. Salt baths alternating with sulphur baths, and taken once or twice a week, should be highly recommended. In

winter time, Tidman's sea salt is a very proper addition to the morning bath. From one-half to one pound may be used on each occasion, and the body sponged thoroughly from head to foot with the salt solution. It will stimulate the capillary circulation of the skin and thus relieve the congested pituitary membrane. The salt sponging should be cold, or slightly tepid. One or two ounces of sulphide of potassium added to twenty or thirty gallons of water in a zinc or wooden bath-tub, and with the addition of one-half to one pound of gelatine dissolved in hot water, makes a suitable bath to be taken twice a week during half an hour and at a temperature from 90°–95° Fah. If syphilis be recognized, the salts of mercury, combined with small doses of iodide of potash, are to be insisted upon, and this treatment should be persistently continued during some weeks and months. The bichloride and biniodide of mercury are the two best salts to prescribe. The biniodide as it is found in the formula vaunted by Gibert, and so much employed at the St. Louis Hospital, Paris, is the one I habitually make use of, giving from ʒ i.– ʒ ij. of this syrup three or four times a day after meals. If there be other evidences of a herpetic diathesis present, such as scaly appearances of the skin of the face or scalp, red botches produced upon slight irritation of the cutaneous surface ; a tendency in youth to eczematous eruptions, pricking and itching of the skin in different parts, especiallyof the face, for insufficient causes, etc., I then use alkalies internally, combined with iron, or if the case be very obstinate, I give small doses of Fowler's solution, or the arseniate of soda, with good results.

Unless I find syphilis, scrofula, or herpetism present, I usually content myself in the treatment of the simple form of this disease of the nasal passages with local medication. And my experience has many times proved to me that in this way I can obtain excellent effects. For some time past my medication has consisted

almost exclusively of local applications, frequently repeated, of different kinds of powders. I regret that I cannot agree with classical authors, such as Duplay, Fränkel, and Cohen, in regard to the efficacy and necessity of the use of some form of nasal douche for the successful treatment of this and allied affections. I formerly tried the nasal douche in a large number of cases, but gave up its employment, first, because I found it injurious to the ears of my patients, and then, too, it aggravated the inflammatory condition of the nose, produced hypertrophy of the turbinated bones and increased rather than diminished the formation of crusts in the nasal passages. Of course, I do not wish to deny for an instant that the douche will bring away a great quantity of dried secretions from the nasal passages, but it will only do this directly from the lower portion of these passages, and whilst the temporary result may be effective and apparently good, the after-effect is decidedly injurious. The nose will be, in a very short time, as much clogged up as ever, and happy is the patient who does not suffer from acute secondary pains in the forehead and ears. The plea urged by the majority of writers is that the douche must be employed because we have no other effectual means of ridding our patients of the excessive amount of hardened secretions which collect in their nasal passages. They urge besides that these secretions, by remaining in place, keep up the disease, and that we can never hope to cure the latter unless we first perfectly cleanse the diseased organ. I hold they are wrong: first, because I find the means adopted of cleansing injurious; 2d, because I do not acknowledge its necessity in the great majority of instances; 3d, because, if it be necessary to wash out the nasal passages, it can be as effectually and much more safely accomplished by means of the coarse spray producer of Dr. Lefferts, than by any one of the different forms of Thudicum's douches. Sprays themselves are only useful when there is a large amount

of hardened secretions which remain impacted in the nasal passages, in spite of repeated blowing the nose, or the application of astringent or other powders. Whenever I make use of a detergent or disinfecting spray, the following formula, borrowed from Dr. Dobell, of London, is the one I most frequently use:

℞ Acid. carbol. liq.... ....ɱ xl.
Boracis,
Sodii bicarb..... . ...āā ʒ ij.
Glycerinæ..... ʒ vij.
Aquæ..... ....ʒ viij. M.

By spraying this solution for a few moments up each nostril alternately, until its presence is felt in the back of the throat, and then asking the patient to blow his nose, I can usually, after several repeated trials, secure a very thorough cleansing of the nasal passages. And if not the first time the patient is seen, upon the second, third, or fourth occasion absolute success will crown my efforts. In very bad cases the spray should be used several minutes (three to five) once every day for a week, then every other day for many weeks, or until the crusts have almost ceased to cause inconvenience. The use of this spray causes slight pain at first, and during a minute or two. After this time has elapsed, it is relatively painless, and the patients rather express a sense of relief than the contrary. In my office, I make use of the glass tubes of Sass, for the anterior or posterior nares (as the case may be), attached by means of a short piece of rubber tubing and a bayonet joint to a longer tube in rubber which is attached directly to a cylinder of compressed air. I thus have an effectual means of throwing a very fine spray with considerable force into the nasal passages, and its penetrating power is very great. If Lefferts' hard-rubber spray be used, it is best to employ only one hand-ball as a means of forcing the air *through* the spray

producer. If two balls be employed, the spray continues to come from the capillary tube for a moment or two after compression of the bulb has ceased, whereas with a single bulb the formation of the spray is arrested almost as soon as compression of the bulb ceases. As I said before, the use of any form of spray is only required in aggravated forms of chronic coryza. In those forms which one sees habitually in one's office, amongst people in tolerably easy circumstances, there is rarely need to use it. In the dry form of catarrh, it is occasionally useful to employ fumigations of simple steam, or better of steam impregnated with benzoin, oleum pini sylvestris, creasote, or iodine. These may be used in suitable doses in any form of steam inhaler provided with a nozzle. The most recommendable forms are Mackenzie's eclectic inhaler and Maw's inhaler. A pint of hot water (150° Fah.) is placed in either of these inhalers and the active ingredient introduced into the water and stirred a moment or two, the lid is put on, and the nozzle fitted to either side of the nose. The impregnated steam is then slowly drawn up into the nasal passages, during five minutes, after which time the crusts are frequently sufficiently loose to be blown out of the nose. Moreover, in those irritable conditions characteristic of dry coryza, the effects of the above remedies are usefully soothing or stimulating. The following formulæ may be used.

℞ Tinct. benzoini comp.
S. A teaspoonful for each inhalation.

℞ Ol. pini sylvestris..... ℥ ij.
Magnes. carb. levis..... grs. xc.
Aquæ..... ..ad ℥ iij.
M. S. A teaspoonful for each inhalation.

℞ Creasoti..... ℥ ss.
Magnes. carb..... ℥ i.
Aquæ..... .ad ℥ iij.
M. S. A teaspoonful for each inhalation.

℞ Tinct. iodinii comp..... .... ʒ i.
S. Ten to twenty drops for each inhalation.

The aromatic spirit of ammonia, the juice of hemlock, the oil of hops are also very useful adjuncts to the hot water, and the steam which comes off has soothing or mildly stimulating properties. For my own part, however, I have found ointments introduced by means of a small camel's-hair brush along the lower meatus, and in contact with the septum and lower and middle turbinated bones, more useful in detaching the crusts of dry coryza of a chronic form, and in soothing the irritated membrane, than the vapors just mentioned. I have usually employed pure vaseline, vaseline with calomel (ʒ i.– ʒ i.), cold cream and white precipitate, and belladonna ointment. I tell the patient to employ one of these each evening upon retiring and each morning on rising. Any excess of ointment remaining upon the outside should be rubbed off with a fine towel, or handkerchief. After a few days, I hear no further complaints in regard to the crusts forming upon the septum and turbinated bones. But as I said before, my principal agents of cure at present are powders. The powder blower of Dr. A. H. Smith may be effectively used, or a straight hard-rubber tube with a properly shaped nozzle or distal extremity for the nostril, and attached, as the spray producer, by its other end to the cylinder of condensed air. There is a receptacle with a sliding cover in the powder blower, for the powder employed (fig. 30). By turning a stop-cock fixed to the tubing at the proper time (just as with the spray), the air from the cylinder passes into the tube and forces the powder almost everywhere throughout the nasal passages. The amount of force of the compressed air used may be accurately determined and regulated by means of a gauge at its upper extremity. These powders should be employed every day, every other day, twice a week, or once a week, according to their nature, composition and

the indications of the disease. I usually commence treatment by means of a rather mild powder, such a one, for example, as the compound powder of belladonna and morphine, or the powder of bismuth and morphine (Ferrier's) already cited, when I spoke of my treatment of acute coryza. After a few days, I commence with the following powder and make an application about once a week to the nasal fossæ.

℞ Bismuthi subnit..... ...ʒ ss.
Pulv. gum acaciæ.... ....ʒ ij.
Pulv. argent. nitratis.....gr. x.–xij. M.

The application of this powder will occasion quite a sharp pain which will last from a few minutes to an hour or more. The tears for a few moments flow over the cheeks and the patient during this time suffers quite acutely. The tolerance of patients for the use of this powder differs a great deal; some bear it very well, and after a few applications have been made, do not in the future object to its use at all. Others suffer from its employment very considerably; it causes them headache to such a degree that they are incapacitated, a whole afternoon after its application, from doing any kind of work, and women especially are sometimes obliged to remain on a sofa for some hours. Finally with several patients I have been obliged to abandon its use on account of the pain caused. What is here true of nitrate of silver in the form of powder is equally true of the same salt in solution, and also of many other metallic salts, such as those of copper, zinc, and mercury. The mode of applying the silver salt in powder rather than in solution is preferable always on the mere score of safety in regard to staining the skin in black. With the powder one need scarcely fear, although as a measure of precaution, when any of the powder remains outside the nose, I wash it off with the end of a wet towel. Whilst I am using the nitrate of silver powder once a week with a patient, I still continue

to use other powders on intermediate days. The following are frequently employed by me with good success.

℞ Pulv. iodoform ..... 3 ij.
Pulv. camphoræ ..... 3 i.
Pulv. acid. tannici ..... gr. v.
Pulv. g. acaciæ ..... 3 ij. M.

℞ Hydrarg. chlor. mitis ..... 3 i.
P. sacch. alb. ..... 3 ij.
P. morphiæ sulph. ..... gr. i.
P. bismuthi subnit. ..... 3 ij. M.

Whenever I find the symptoms of post-nasal catarrh adjoined with those of chronic coryza, and this is very frequently true, I make use of these same powders through the posterior nares, as well as anteriorly. The figures of the curved hard-rubber tubes I then use have already been shown (fig. 30). Besides the local treatment above considered, I would refer my readers here as elsewhere to the general principles laid down in a former part of this work, for the treatment of various forms of coryza. Proper food and clothing, cleanliness, freedom from exposure to rapid changes of temperature, etc., are quite as important in this disease as a means of prophylaxis and cure as they are believed to be for other allied affections.

CHAPTER VIII.

HYPERTROPHY OF THE TURBINATED BONES.

The term hypertrophy of the turbinated bones is a faulty one, for the reason that real hypertrophy of these bones very rarely exists. Sometimes, indeed, it is true that one or more of these bones have become softer, more spongy, and more voluminous than they are in a perfectly healthy nose, but these are infrequent cases, and the very general rule is scarely less true, *i. e.*, that hypertrophy is confined to the mucous membrane and sub-mucous layer which cover these structures. With the inferior turbinated bones, particularly, this hypertrophy is situated in the erectile stroma, or reticular structure, which lies between the periosteum covering the bone directly and the mucous membrane which bounds the outer wall of the nasal fossæ. Here we have a formation analogous or almost similar to that of the labia majora or penis, which is readily irritated and capable of rapid augmentation in size, and equally rapid collapse. This we are all familiar with, by our experience of what takes place in an acute attack of coryza. The nasal passages may be almost completely occluded, and a few seconds afterwards they may become pervious in a measure, to be again obliterated in less time than one can believe who has not carefully noted the change. This phenomenon of daily observation occurs, although less markedly and rapidly, in chronic as in acute coryza. Many writers ignore the entity of permanent hypertrophic thickening of the soft tissues covering turbinated corpora cavernosa, in their description of the affections

of the nose, and consider it as an ordinary and almost necessary sequela of simple chronic coryza. According to my belief, this appreciation is incorrect; for although this hyperplasia of soft tissues is present in a moderate degree in many cases, whenever it exists to an exaggerated extent its symptoms and pathological conditions are so characteristic that it certainly merits a separate chapter. Upon examination of the nose anteriorly, by means of the nasal speculum, the pituitary membrane is red, thickened, sometimes velvety, and very vascular. Microscopical examination shows a hypergenesis, and often also an hypertrophy, of the normal elements of the mucous membrane. In a case cited by Duplay, there was an exaggerated development of the glands, and the hypertrophied chorion was covered with several layers of ciliated epithelium. Sometimes the hypertrophy of the membrane is general, sometimes it is particularly localized to the middle and inferior turbinated bones. The rational symptoms of so-called hypertrophy of the turbinated bones resemble very much those of simple chronic coryza, only they are more pronounced and some are added which do not exist in this last-mentioned disease. There is a characteristic nasal voice, which by its persistence indicates hypertrophy of the pituitary membrane and the thickening of the laminæ of the nose. Now we have all observed this nasal tone of voice, or "twang" as it is oftentimes called in common parlance, and it would appear to be somewhat special to Americans as a race. Foreigners, and more particularly Englishmen, speak laughingly or sarcastically of this national peculiarity. I do not think, however, that they or we are generally familiar with its true etiology, inasmuch as I am inclined to the belief that it is usually considered as being due to a faulty or improper use of the laryngeal muscles or those of the palate to produce phonetic sounds. This conviction, though popular, is unfounded in fact, and I feel quite sure that, in the large major-

ity of instances, a nasal intonation of speech is correctly explained by the more or less complete closure of the nasal passages. Thus the distinct pronunication of the so-called nasal consonants (*m*, *n*, *p*, *b*, etc.) is made more than difficult. In the normal condition of the nasal passages, there is a rapid and considerable current of atmospheric air which passes backward and forward through them during every movement of inspiration and expiration. When they are obstructed from any cause, our articulation of certain words becomes thick, or as it were muffled and deadened, owing not so much to the fact that we talk in reality through the nose, as simply because these air chambers no longer existing except to a very limited extent, the normal resonance is no longer given to these sounds when uttered. In some instances the hypertrophied condition of the pituitary membrane is not considerable; it causes but slight obstruction of the nasal passages and does not sufficiently account for the nasal sound given to the articulation of certain words. Under these circumstances the soft palate has frequently participated in the chronic inflammatory changes of the Schneiderian membrane, and has become more or less thickened and infiltrated in its mucous covering and submucous layer. We may then have slight paresis of the muscular fibres which are intrinsic to this organ and which is the efficient cause of a want of coaptation of its free border with the posterior wall of the pharynx, both in deglutition and in the enunciation of certain words which require for their pure and correct delivery a perfect physiological action of this organ. Is it merely the muscular fibre which is here diseased, compressed, or atrophied and degenerated, as a normal consequence of contiguous inflammation; or are the terminal nerve filaments of the spinal accessory, glosso-pharyngeal, and the branches of the facial which distribute themselves to the glosso-palatine muscles on either side, affected with chronic neuritis? Reasoning by analogy, I would say that

in these cases both explanations may be given, and both are in a measure acceptable as true explanations of a loss of functional power. Tumors of divers sorts, and especially mucous polypi, taking origin in the mucous lining or bony walls of the nasal fossæ, and filling them up more or less completely, may and do produce this same nasal intonation; but their existence is much less frequent than the condition previously mentioned and therefore less important, viewed in this aspect. Besides, these neoplasms present features as a rule which lead readily to their recognition. Whereas simple hypertrophy of the pituitary membrane, to a limited extent at least, may remain ignored for a long period of time, unless special attention be directed toward it as the cause of defective speech, the patient is conscious of a more or less constant feeling of stuffiness in the nasal passages, and at times the nose is so much obstructed he can scarcely breathe. Under these circumstances, the nose is blown with considerable difficulty.

The following very remarkable history and drawing I owe to the courtesy of Dr. Lefferts, of New York. In this instance the hypertrophy of the mucous membrane covering the inferior turbinated bones was so excessive as to produce *total occlusion* of the posterior nares:*

Case I. *Hypertrophy of the Mucous Membrane covering the Inferior Turbinated Bones.*—T. S., aged twenty-one; painter. The patient states that for years he has suffered from the ordinary symptoms of a *chronic nasal catarrh*, and that during the last four years the most noticeable symptom has been the change in the *voice*. Two years ago the right naris became gradually oc-

* It will be remarked, in the perusal of this case, that the voice was "dull or deadened." As there was "marked adenoid hypertrophy," the cause of this *special* change of voice would be found *altogether* in this presence were the condition of the *inferior turbinated bones* not such as to exaggerate notably this feature of Dr. Lefferts's case.

cluded, and six months later the same condition occurred in the left; the voice at the same time lost all resonance and became *dull* or *deadened.* He has ringing and *noises in the ears,* especially when speaking, but there is *no diminution in the sense of hearing.* He states that at times, when about to speak, he apparently loses control of his voice, and that it requires a certain effort and a clearing of the throat of mucus before it can be regained. He complains of restless nights, and of suffering much inconvenience from the occluded state of the nostrils.

Examination shows follicular pharyngitis, moderate hypertrophy of the tonsils, marked *adenoid hypertrophy* at the *vault of the pharynx, and total occlusion of the posterior nares, due to the hy-*

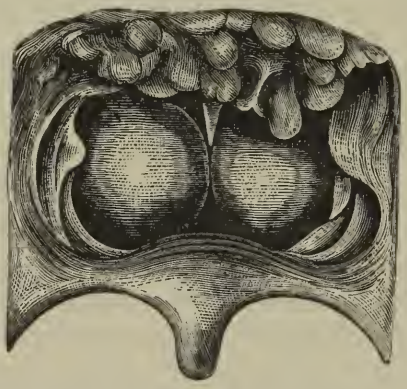

FIG. 38.—Hypertrophy of the mucous membrane covering the inferior turbinated bones (Lefferts).

pertrophied tissues of the inferior turbinated bones impinging one against the other and occupying the whole posterior nasal space. Between these masses and above can be seen a small portion of the septum narium. The orifice of the right Eustachian tube is pressed upon and nearly occluded; that of the left is intact.

There is a decided augmentation in the amount of nasal secretions, or there is no more than seems normal. The qualities of these secretions are not always obviously changed. The voice

has usually a decided nasal intonation. Epistaxis is not infrequent with some individuals, with others it rarely or never occurs. If the hypertrophy be excessive, the patient cannot keep the mouth tightly shut even during ordinary respiration. Upon the slightest exertion there is dilatation of the alæ nasi and apparent dyspnœa. The sense of olfaction is frequently much impaired, as also the sense of taste. In some patients, hearing rapidly becomes defective. All these symptoms are readily explained by the obstruction which exists in the nasal fossæ. Such patients come to us seeking relief, as a rule, *not* for excessive secretion of mucous behind the anterior nares, but on account of inability to breathe through the nose. We are told that they snore during sleep and sleep with their mouth open. In the morning they awake with a parched, dry feeling in the back of the throat. At first their power to expectorate seems almost lost. And yet they are conscious of being annoyed by a small amount of viscid inspissated mucus, which adheres intimately to the posterior portions of the nasal fossæ. After several strong efforts of hawking and scraping the throat, as it were, they are able to spit out this irritating and offensive matter. Sometimes, before being able to effect it, they are obliged to gargle their throat with water a few moments, and they will then almost always get rid of the small mass, crust, or pellet of mucus without further inconvenience. If direct inspection is made of the pharynx, we see it red and irritable; at one time somewhat shiny and glazed, at another of a dull, turbid hue, and with more frothy mucus upon its sides than should be present. The column of air which passes through the nasal passages is insufficient for quiet breathing, owing to the close approximation of the swollen soft parts which cover the middle and inferior turbinated bones with the nasal septum on either side. Hence more or less dyspnœa, hence, too, the stuffy sensations in the nasal passages of which we have already spoken. From this

condition, also, proceeds the interference with the olfactory and gustatory sense. Inasmuch as the in-drawn air does not reach the upper portion of the nasal fossæ where the peripheral extremities of the olfactory nerves are distributed in anything but an extremely small volume, these nerves are not sufficiently impressioned and the sense of smell is almost always notably blunted. Several times I have known complete anosmia to result from this condition, and I have explained it in part by the small quantity of air which reached the membrane of special sense, in part by the pressure which has taken place upon the nerve tubes, owing to infiltration of tissues.

Within a few days of the time of writing this (Nov. 5th, 1879), singular to relate, I have seen two cases of the kind I here refer to; one was that of a Newport lady (sent to me by Dr. Wm. Birckhead, of that city), Mrs. A. M., 49 years of age, married, the mother of one grown child, who has had imperfect taste and smell during the past two years. This lady has never had any severe illness; she is not aware of the efficient cause of her symptoms unless they originated in a severe cold from which she suffered shortly before their appearance. The cold she mentioned was the most severe she ever had had, and left her with an unpleasant taste in the mouth which lasted several weeks and then gradually wore off, leaving her taste much impaired. Within a year her taste has somewhat improved. The sense of smell was lost at the same time as that of taste, but is now present, though in a less degree than the latter. She can now distinguish between salt and sugar, acid and bitter, etc.; she cannot distinguish between different kinds of meat, as mutton and beef. She can smell ammonia, cloves, etc., but cannot distinguish them by taste. She breathes easily, no pain in nose or throat; has very slight post-nasal catarrh (whitish and watery discharge), appetite good, tendency to constipation. Physical examination shows only

moderate thickening with follicular disease of pharynx and post-nasal space, and no other lesion of the pituitary membrane. The diagnosis is incomplete anosmia with much impaired taste, due probably to compression of the peripheral fibres of the olfactory nerves by plastic exudation into the superior portion of the nasal mucous membrane. The prescription in this case is: Phosphide of zinc, gr. $\frac{1}{10}$; Extr. nucis vomicæ, gr. $\frac{1}{4}$, t. d. s., and the use of the following powder daily through the anterior and posterior nares, with powder blowers.

℞ Pulv. morphiæ sulph.... .....gr. i.
Pulv. belladonnæ.... .....gr. x.
Pulv. hydrarg. chlor. mitis.....gr. xx.
Sodii bicarb.....gr. xv.
P. g. acaciæ.....ʒ ss. M.

Electricity locally applied has thus far remained without perceptible good results. The prognosis of this case is doubtful.

Case II. is that of Dr. C. M., married, past middle age, who enjoys excellent general health, his only trouble being that of incomplete anosmia, and partial loss of taste, probably occasioned by a cold taken some months ago. This patient was sent to me by Dr. D. B. St. John Roosa, of New York. Upon physical examination of the nasal fossæ, some thickening of the pituitary membrane, especially upon the left side, was found. There were also "granulations" moderately hypertrophied in the post-nasal space. This patient has already employed many remedies, both local and general, with but slight advantage. Amongst others the following "smelling salts," of which the formula was given him by Mr. Durham, of London, and which he tells me is much used and vaunted in England to-day; and as it seems to me a rational formula, I herewith give it to my readers.

1. ℞ Acid. carbolic. pur..... ..... ʒ i.
Carb. ligni..... .... ʒ ss.
Iodini pur..... ..... ʒ i. M.

Mix the c. a. p. with half the wood charcoal thoroughly. Mix the iodine with the other half and mix together.

2. ℞ Ammonii sesquicarb..... .... ℥ i.
Carb. ligni..... ..... ℥ ss.
Camphor..... .... ℥ i. M.

Add No. 1 and No. 2 lightly together, and add ol. lavand. gtt. xx., and as much compound tincture of benzoin as is needful to make a thick paste, and put in a wide stoppered bottle.

The prescriptions I ordered for this gentleman were as follows.

℞ Fowler's solution, gtt. i., t. d. s. after meals: increase to gtt. iv. t. d. s.

℞ Pulv. camphoræ,
" iodoform.....āā ℥ ss.
" acid. tannici..... ....gr. v.
" morph. sulphat..... .....gr. i.
" belladonnæ..... ....gr. x.
" g. acaciæ..... ..... ℥ ss.
M. S. Use with powder blower once a day.

Now, as we all know, much of our keen appreciation of sapid substances depends upon their votatile principles which affect sensibly the organ of smell, we readily appreciate how to a certain extent taste is also rendered less acute and discriminating by blocking up of the nasal passages. But this is not all; the hearing is soon affected. Adults and children of advanced years are conscious of uneasy sensations in their ears (itching, tickling, buzzing, etc.), and by degrees their auditory function is surely rendered less perfect. With such persons, these symptoms occasion solicitude, awake reflection, and a physician's advice is usually sought. With infants or very young children the case is different. They have repeated attacks of acute coryza, which yield sooner or later to time and household remedies, and the mothers or

guardians have no concern about the ultimate impairment of hearing. The child grows and reaches the age of six or eight years. Then it is noticed for the first time, with regret and astonishment, that the little one is decidedly deaf and unable perhaps to keep up with his class at school. At this period, however, there may yet be hope, and if the disease be at once properly attended to by a competent aurist it may be in great measure or entirely cured in time. Unfortunately, such is not the sequence of all these cases, for frequently audition will remain imperfect throughout life, in spite of the most perfect after-treatment. Hearing power being thus permanently disabled, future usefulness and enjoyments are likewise greatly lessened. In a few and rather exceptional instances, hearing becomes progressively worse, and amongst the very poor and ignorant it may be entirely lost. In the latter class are found those who have been treated empirically or not at all. The result is woeful, as the inmates of our deaf and dumb asylums can testify.

Diagnosis.—Upon direct examination of the nasal fossæ, we find on one, or more frequently on both sides, a large red mass, which is evidently attached to the outer wall of the fossæ and which almost, if not quite, touches the septum narium by its inner aspect. Such tumors are not to be confounded with mucous nasal polypi, which are of lighter color and ordinarily pedunculated. If we make use of a probe, we cannot limit their base which forms part of the soft tissues covering the turbinated bones, and upon pressure, whilst the probe will sink in slightly, it will soon be arrested by the solid bone beneath; and yet these two very different morbid changes are often confounded one with the other. No doubt this is dependent, not so much upon their actual visible appearances which are so different even to a somewhat inexpert eye, as to the fact that many of the rational symptoms are similar with both. Both, for example, are aggravated under

somewhat similar circumstances, and especially is it true when the atmosphere is cold and humid. There are important differential signs over and beyond the mere aspect. In the first place, hypertrophy of the soft tissues inside the nose is ordinarily bilateral, whereas the mucous polypus or polypi exist more frequently in one cavity. Again, if a mucous polypus obstruct one side of the nose and the healthy side be closed entirely by pressure with the finger, breathing through the nose is absolutely prevented. In the other affection, if the same experiment be tried as above, namely, pressure be made on one side of the nose whilst an effort to breathe through the other side is exerted, the result will be accomplished, although with some difficulty and with the noise peculiar to partial stoppage. If the mouth be tight shut, in this latter case, whilst the patient is breathing solely through the nasal passages, but a short time will elapse before the patient is compelled again to open his mouth, on account of an insufficient supply of air reaching the lungs, and the beginning of unpleasant symptoms of slight asphyxia. There is something very like, as Duplay remarks, to what occurs with the wearer of a tracheotomy tube of such small calibre as to incompletely satisfy the needs of the system for a full supply of air. The confusion between a fibrous polypus and the condition we are considering might occur, were we merely to look at the color of the tumors which in both cases is very similar. But a fibrous polypus is usually one-sided, whereas hypertrophy of the soft tissues is habitually bilateral. As to almost all other symptoms, they are very dissimilar. With deviation of the septum narium there can be no possible error, if it be observed whether or not the tumor is attached to the outer or inner wall of the fossa. The inclination of the septum is nine times in ten towards the left, so that with a tumor in the right fossa we have an additional sign of differential diagnosis.

Complications.—Amongst the complications of this disease we should lay special emphasis upon night-mare and asthmatic attacks. The former is only too frequent with children who have the nose obstructed, and just as excision of enlarged tonsils will permit an infant or older child to sleep quietly, so will the effective treatment of this disease, in other cases, effect the same result. Many of the German authors cite the attacks of asthma which are the direct consequence of continued obstruction of the nasal passages, and I have every reason to believe they are correct. It is probable, too, that when this condition is permitted to exist for a long while without effectual efforts to relieve it, dilatations of some of the air-cells will be produced and an emphysematous condition of the lungs be present. This emphysema in itself becomes a sufficient cause of the asthmatic attacks. A child who has this affection of the nasal passages has a very characteristic countenance. The nose is somewhat flattened at times, the mouth habitually held agape and the face has a vacant and silly appearance. There is little doubt, too, that nutrition is interfered with on account of insufficient air, or of air with deleterious properties. Air which passes through the nasal passages before entering the lungs is rendered more equal in temperature, more moist, and is freed from injurious particles of dust or other substances floating in it. When breathing is carried on through the mouth, the air is dryer, unequal in temperature, and contains much that is eminently fitted to occasion irritation of the throat, larynx, and bronchial tubes, and thus to set up acute or chronic troubles of all these delicate and highly organized structures. The duration of this disease is practically without limitation, in our climate, if left to itself, when once it reaches a certain stage of advancement. I have never known a case to get well without treatment, although I have known very many to get much worse by ill-advised and wrong therapeutical methods. If such person be transported

to a warm, equable, and soothing climate, I can understand that he may be greatly benefited; but wherever sudden changes of temperature take place, with much humidity ever present in the atmosphere, no such termination should be looked for. I am inclined to the belief, also, that this hypertrophy of soft tissues of the nasal passages, if permitted to remain for a long period of time unrelieved, will gradually but surely lead to all the consequences mentioned in the preceding description, which are: loss of smell and hearing, blunted taste, chronic throat and bronchial affections, stunted growth and generally impaired nutrition.

Etiology.—In many instances I attribute hypertrophy of the submucous tissue covering the turbinated bones to a pernicious method of treatment. In others, even more numerous, anterior attacks of acute coryza will have occasioned it to a moderate degree. If, however, I discover this condition to exist to an exaggerated extent, especially amongst adults, my ordinary experience assures me that it is due in part to a mischievous therapeutic method previously adopted. It is then, properly, considered to be an accidental complication, and not a normal sequela of the primary affection. And I am strengthened in my belief, because I encounter very many cases of chronic coryza where respiration through the nasal passages is relatively free and undisturbed. Moreover, patients suffering from excessive obstruction in the nose have usually been treated during months and years by the repeated application of douches, injections, or sprays to the Schneiderian membrane. These all act in a very similar, though more or less injurious manner. By their contact the mucous membrane is irritated again and again. The first effect of this irritation is to cause the capillaries to contract and force from their interior a certain amount of serous fluid. For a time (from a few moments to several hours) the patient breathes more easily through the nose. This benefit unfortunately is but temporary,

and after a brief period the pituitary membrane again becomes turgescent and angry looking, and the secondary consequence is serous or plastic infiltration of the mucous and submucous tissues.

When catarrh of the nose is of late date, these results follow one another very rapidly; when it is already of long standing, they take a longer time to manifest themselves. And the reason of this is evident to all who are familiar with the structures covering the turbinated bones. If the nasal passages become almost completely blocked up, in consequence of this irrational treatment, the damaging results before spoken of are already begun, if not entirely accomplished. The drum-heads are sunken, the ossicles are trammelled in their movements, and there is a notable vacuum in the tympanic cavity. The barrier to the passage of air through the nose, during normal respiration, becomes almost impenetrable; every effort of deglutition sucks out a portion of residual air from the middle ear, and ultimately the non-balanced external pressure upon the membrana tympani furnishes us with some of the familiar symptoms of subacute aural catarrh. Possibly turgescence, or collapsus of erectile tissue in this region, and more particularly over the inferior turbinated bones, is under dependence of the vaso-motor nerves which are here distributed, and are, as we know, very sensitive to external impressions. They will undoubtedly react, in this place as elsewhere, to all kinds of irritants, mechanical or other, and they will also be influenced more or less by the emotional sentiments. Thus I am able to explain how it is that an inflammatory occlusion of the nose may change place rapidly from one cavity to another. This quick shifting state is proximately brought about by a greater or less amount of functional activity in the smooth muscular fibres which form a component part of the trabeculæ and walls of the closely juxtaposed cavities, and this activity is finally attributable to nerve

filaments in a hypersensitive condition. The stimulus itself of these peripheral nerves may be either of direct or of reflex origin; and cold hands or cold feet may cause obstruction of the nasal passages as effectually and rapidly as an irritant locally applied.

Treatment.—Under the head of prophylactic treatment, I would strongly emphasize the importance of not allowing what is considered to be an innocent attack of acute coryza to run its course unchecked. It is wise to use the remedial agents already spoken of in a previous chapter, in order to bring acute coryza to a speedy and favorable termination. In this way permanent thickening of the soft tissues of the nose and its after consequences are avoided. The more frequently attacks of acute coryza recur, the more likely is it that hypertrophy will follow. Therefore, all efficient causes of cold should be avoided, and all the good habits I have referred to in the chapter on prophylaxis, etc., should be strictly and systematically adhered to. It is evident to my mind that, if a clear appreciation of the facts which have been previously narrated were generally possessed by practitioners and patients, the unfortunate sequences of hypertrophy of soft tissues in the nose would rarely be deemed inevitable.

Proper and judicious treatment of this condition in its initial stage would be inaugurated and would render improbable that the specialist should be called upon to combat it at its ultimate period. In order to carry out such treatment, the nasal douche must be banished absolutely from the physician's store house of resources. He must learn to look upon it, in nine cases out of ten, where it is persistently used, as being sure to occasion the troubles that we most wish to avoid. Even medicated sprays, in my experience, are not curative except in a very limited measure. Their frequent and prolonged use appears to increase rather than to diminish the obstruction against which we are fighting. Occasionally employed, say once every day, or every other day,

when there is considerable dryness of the mucous linings, or when a certain amount of inspissated secretion adheres to the pituitary membrane and in places is removed with great difficulty by blowing the nose, they are of decided benefit. In other instances, and when these conditions do not exist, their advantage may be temporary, but it does not last. Too frequently they merely render the nasal passages more pervious for a short time, and they again become in a few short hours as much occluded as before the spray was tried. The spray of anthoxanthum odoratum and the one already mentioned of carbolic acid, soda, borax, etc., are the two which have done me the best service in the treatment of hypertrophy of the soft tissues covering the turbinated bones. The tincture of anthoxanthum odoratum may be purchased in certain large homœopathic pharmacies, such as Bœricke & Tafel's, New York. I have used it in the proportion of 10 to 20 drops to the ounce of water in an ordinary hard-rubber spray producer. It causes slight stinging pain at first of the pituitary membrane, but in a few moments disagreeable sensations disappear and the nasal passages are rendered more permeable. In a few rare instances I have seen or known it to afford considerable relief, and which was more or less lasting. I am informed by a relative who purchased and tried it for the first time in London, that it is there advertised in some of the homœopathic drug stores as a specific for so-called catarrh.

Metallic sprays of sulphate of copper and zinc, of nitrate of silver, of bichloride of mercury, etc., are painful, unless employed in very weak solution. They often occasion severe headache which will last several hours. I have frequently known them to occasion all the symptoms of an attack of acute coryza, accompanied by much pain, sneezing, and a large amount of thick, yellowish discharge from the nasal cavities, but have not remarked any decided curative effects result from their employment. In

this disease, their use is, therefore, not to be encouraged. In the commencement of this affection, astringent or alterative powders are of far more value in remedying the local condition. By themselves, when blown through the nasal passages every day, or every other day, for several weeks or months, they will render them sufficiently patulous for quiet breathing. Frequently I blow them through the nose both anteriorly and posteriorly with good effect. This is true particularly when any catarrhal inflammation of the naso-pharyngeal space is present. Besides the powders mentioned in the last chapter, the following may be advantageously employed.

℞ Pulv. iodoformi..... ℥ ij.
Pulv. acid. tannici..... gr. v.
Pulv. g. acaciæ..... ad ʒ ss.
M. S. To be used with the powder blower.

℞ Hydrarg. chloridi mitis ..... gr. xv.
Hydrarg. oxidi rubri.... .....gr. ij–v.
Sacchari..... ʒ ss. M.

℞ Hydrarg. ammoniati.....gr. x–xx.
Pulv. altheæ..... ʒ i. M.

When powders prove of no avail, I have made use, with temporary advantage, of belladonna and white precipitate ointment introduced into the nose by means of a camel's-hair brush, and have also found some benefit at times from repeated pencillings with iodine, gtt. v. to x.; tinct. opii, gtt. xv.; and glycerine, ℥ i.– ℥ ij. At one time I tried what might be effected by introducing prepared sponges or laminaria digitata into the nasal passages. Both of these substances became much swollen by absorbing moisture from the nasal passages and they certainly expanded the passages themselves by direct pressure upon the soft tissues, but their presence became exceedingly painful after a few hours, and more than once, owing to their swelling unequally, there was some diffi-

culty in removing them. After they had been removed, the patient undoubtedly breathed for a little while better than he had done before their introduction. But in a few days the obstruction was again as great as ever, and after a few trials with each patient, I thought it advisable to abandon their use. Even now, I sometimes make use in my office of soft metallic bougies which are bent almost at right angles and of suitable length to pass through the nasal passages. One of them may then be slowly introduced through the lower or middle meatus until it causes gagging by its further extremity touching the pharyngeal wall. It should be then withdrawn slightly and held in position four or five minutes, or until the passages have become decidedly more open. We can now make a much more thorough application of powder to the nasal passages by means of our anterior hard-rubber powder blower attached to the cylinder of compressed air than we could do without having passed the metallic bougie as a preliminary measure. Of course, if there be a deviation of the septum, we shall have to bend the metallic bougie, so as to accommodate it to the changed direction of the meatus. Again if the first bougie introduced does not pass easily, we should not use much pressure, but withdraw it and try another one of smaller calibre. I believe the use of these soft metallic bougies in New York City is due in the first instance to Dr. Clinton Wagner. After making use of the metallic bougies, or even without this preliminary step, I have often had very encouraging results from the introduction into the nasal passages of soft gelatine bougies medicated with sulphate of zinc and belladonna. The gelatine bougies employed by me are precisely similar to those employed in the treatment of gleet. I believe those first made use of in Germany had a somewhat different shape. In a couple of hours the covering which can be dissolved is entirely liquefied, and what remains of the bougie comes away on the handkerchief, or falls into the pharynx and can be

expectorated. These gelatine bougies are not painful, they bring the astringest into direct contact with the diseased membrane for a considerable time, and the results achieved by their employment are sometimes excellent.

In the event of the preceding local medical means proving inefficient to produce cure, or at least great amelioration after thorough trial, we should direct attention towards operative procedures. Different methods of surgical treatment have been lauded at different periods and by different distinguished surgeons. They all resolve themselves into treatment: 1. by cauterization; 2. by cutting, or tearing away redundant soft tissues. In the first category I would mention the topical application of fused nitrate of silver to the soft tissues over the turbinated bones, as strongly recommended by Schrötter. Schrötter uses a special instrument in making these applications, of which the figure is here given (fig. 39). It will be seen that there is a long, narrow, somewhat

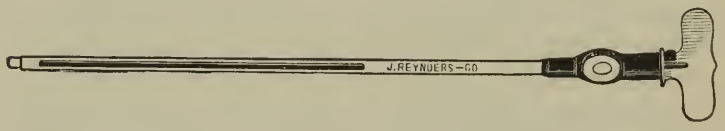

FIG. 39.—Instrument for cauterizing the pituitary membrane (Schrötter).

deep receptacle which extends one-half the entire length of this instrument for the fused nitrate of silver. During the introduction of this instrument into the nose, the caustic is completely concealed, by means of a turning plate which covers it over. When it has been properly and sufficiently introduced into the nose, the caustic surface of the instrument is exposed and kept in contact a few instants with the mucous membrane of the inferior or middle turbinated bone, and after turning the instrument somewhat, so that the caustic may touch a wide surface, this is again concealed by means of the sliding piece and the instrument withdrawn. Schrötter speaks very confidently of the success which

has followed these applications. In my hands, with a less perfect method of application, nitrate of silver has failed to do what is required of it. It has not cauterized deeply enough, and has allowed the opposing surfaces to come together again after the withdrawal of the instrument.

This has led to superficial cauterization of the septum, and often the elimination of the sloughs has led to partial adhesions between the thickened membrane over the turbinated bones and that covering the septum. This has occurred despite repeated and careful plugging of the nasal passages with scraps of lint immersed in sweet oil and assiduous care to prevent such trouble. Perhaps if I had neutralized the action of the nitrate immediately by the injection of a strong solution of common salt into the nasal passages, I would have prevented adhesions being formed that I was compelled to tear asunder several times within a week or two after the cauterization. The cauterization is not extremely painful and is very simple of performance. For these two reasons, it should be tried if there were not some better method at hand. The galvano-caustic knife has been strongly recommended during the last few years in the treatment of this disease. The results obtained by Michel, of Bonn, are the most remarkable. Unfortunately, this gentleman, whilst speaking of his wonderful and numerous cures, does not give accurate details of his method of procedure; and besides, he has the misfortune, in my estimation, to speak of the cure by this means of nasal catarrh, when he can only mean the cure of a frequent complication of it, *i. e.*, hypertrophy of the soft tissues over the turbinated bones. Several American practitioners of note, however, have fully tested the use of the galvano-caustic wire or knife in burning away these redundant tissues and thus giving a free passage to nasal respiration. At the late session of the American Laryngological Association, Dr. Shurly presented some ingeniously devised electrodes for this

purpose and also spoke of his great success in their use. Dr. Shurly employs a very simple, ingenious, and at the same time efficient protector in ivory for the nasal septum during his cauterizations. Figures of these instruments, with descriptive text, thanks to his courtesy, are here given (fig. 40).

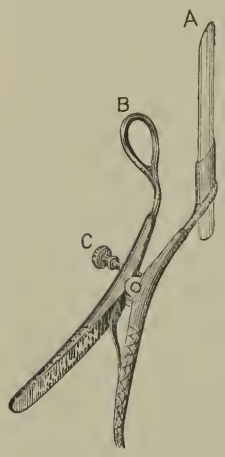

FIG. 40.—1. Shurly's Nasal Speculum.

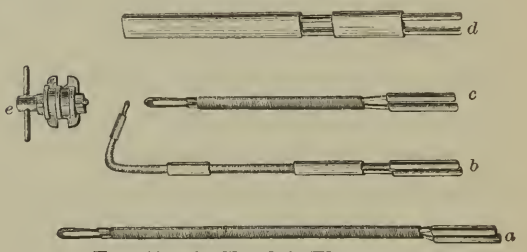

FIG. 40.—3. Shurly's Electrodes.

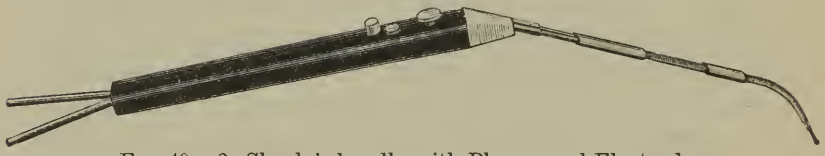

FIG. 40.—2. Shurly's handle with Pharyngeal Electrode.

DESCRIPTION OF ELECTROTYPES.

FIG. 1.—Nasal Speculum (self-holding); A, the ivory plate which slides in blade of the instrument; B, outside blade for keeping back ala nasi; C, set screw for maintaining desired degree of dilatation.

FIG. 2.—Handle with pharyngeal electrode to which any of these electrodes can be attached.

FIG. 3.—*a*, Straight long electrode for passing through to posterior nares; *b*, post-pharyngeal electrode; *c*, short straight electrode for applying to anterior parts of nasal passage; *d*, two small cylinders inclosed in ivory, through which wire passes in snaring tumors, etc.; *e*, windlass to be used with above, which can be attached or *detached* at will *from* the handle.

In a note addressed to me Sept. 9th, 1879, Dr. Shurly writes

as follows: "I have used lately in a few operations upon the pharyngeal tonsil an electrode formed of bent platinum wire (No. 19 or 20). It has the advantage of being bent at any angle or length to suit the case." Dr. Wm. H. Dunean, of New York, corroborated strongly the experience of Dr. Shurly by his own excellent results in the use of the galvano-eautery for the efficient cauterization of the hypertrophied tissues of the nasal cavities, but prefers a curved handle to a straight one, because he is thus enabled to make a rhinoscopic examination with his right hand while holding the electrode with the left hand (or vice versâ) in the nasal passage being operated upon, without his view of the naso-pharyngeal space being obstructed. Dr. Dunean has also found that by covering his electrodes directly with asbestos, except of course at the platinum end, he prevents the outer covering of silk from being burned through during each caustic application and the hot wire coming into direct contact with surrounding tissues. A set of electrodes has just been made for me by Tiemann & Co., in which the asbestos and silk have an outer covering of glass to prevent them from wearing away so soon. While this is in one respect an improvement, it does not permit the electrodes to be bent at all after being made without causing the glass covering to fall off. Further, instead of using a curved handle, my electrodes are bent twice at a right angle near the proximate extremities. Since writing what precedes, Dr. Shurly's paper has appeared in the number of the St. Louis *Medical and Surgical Journal* for Jan. 5th, 1880. From it I have transcribed the following description of his nasal speculum, his manner of employing it, etc. "It is composed of two parallel limbs, connected by a joint near their centre, similar to the Elsberg speculum. At the nasal extremity one limb is finished into a fenestrated blade for holding out the ala, and the other into a slot-like blade, into which slides a concavo-convex plate of ivory, about two inches long by

about one-half inch wide. The handles (which are short) are held separated and the blades in apposition by a small intervening spring, while the blades are separated by means of a small thumb-screw. It should be introduced with the blades in apposition and the ivory shield pulled out. Then, after pushing the shield gently in along the septum to the required depth, the blades may be separated and the cartilaginous nose dilated to the required width by means of the small thumb-screw. Now the cautery electrode may be introduced along the ivory plate as a guide, the current turned on, and the diseased membrane destroyed to the required depth and extent; or, after the plan of Michel, several fine lines may be drawn across a given spot at one introduction." Hitherto the galvano-cautery has been found somewhat difficult to manipulate successfully within the nasal cavities, and unless extreme care has been taken, there has been great risk of cauterizing contiguous parts. With the improved protector of Shurly, which is less clumsy and therefore superior to Browne's of London, there is no such danger. And if the galvano-cautery be now properly and skilfully used, its work is effectual, and the cicatrix broad enough to produce by its contraction a sufficient opening through the nasal fossa for the accomplishment of normal function.

Dr. D. H. Goodwillie, of New York, has modified the thermo-cautery of Paquelin so that it may be conveniently and effectually applied through a glass protector of funnel shape* (fig. 41) to the anterior portion of the hypertrophied turbinated bones. The

* I have had made for myself different forms of these glass specula besides those made use of by Dr. Goodwillie. One of the most advantageous is made with a straight narrow plate, slightly hollowed out on the outer side, and intended to protect the nasal septum from the heated platina knife. This plate is attached at its outer extremity to a wide pavilion, so that the nares are protected during the withdrawal from the nose of the straight heated electrode.

important modification consists mainly of a shorter handle, a narrower and smaller platinum point, and its adaptation to a compressed air receiver instead of being kept heated by the intermittent and fatiguing compression of a hand-ball. The handle should be held between the index and middle fingers of the right hand, the thumb being employed, by pressure upon the rubber tubing, to regulate the quantity of air which passes into the hollow platinum point, and thus, also, the degree of temperature to which the heated "POINT" attains. In some instances, it is a saving of time, trouble, and expense to make use of this instrument (fig. 42) in preference to the galvano-caustic wire or knife.

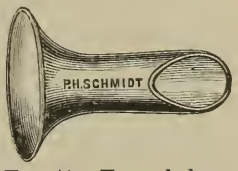

FIG. 41.—Funnel shape glass Nasal Protector (Goodwillie).

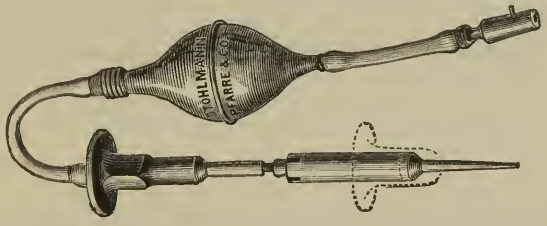

FIG. 42.—Modification of Paquelin's Thermocautery (Goodwillie).

A method of cauterization by means of fuming nitric acid, made known to me by my friend and colleague, Dr. Andrew H. Smith, of New York, may be described as follows: An ordinary large sized Eustachian catheter in hard-rubber, straightened at its further extremity and bent towards its pavilion, is slit on one side and then dilated. Into the groove thus formed an ordinary steel cotton holder, around whose small rough extremity a suitable piece of absorbent cotton is twisted, is introduced a short distance. Then by means of a glass rod, or piece of wood, a few drops of the acid are carefully applied to the exposed surface of

the cotton and the catheter is pushed gently, after greasing it (through a hard-rubber ear speculum retained in the nostril to be operated upon), into the nasal fossa through the space between the lower turbinated bone and the septum, as far back as the pharyngeal wall. It is then slightly withdrawn and the cotton holder pushed home. After a few seconds the cotton holder is brought by traction out of the fossa. Another cotton holder which has been immersed in a magma of bicarbonate of soda and water, is now quickly passed along the grooved Eustachian catheter, so as to neutralize any excessive cauterizing effects of the acid application. The instrument of Dr. Smith has been slightly modified in one or two particulars by myself. The further end is closed at present by a plate of hard-rubber, so as to prevent possible cauterization of the pharynx and the proximate

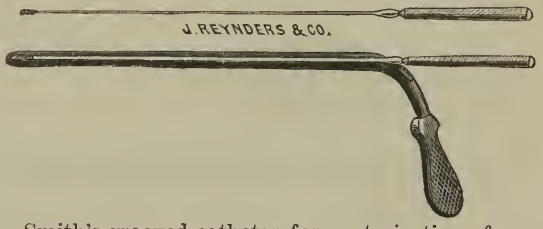

FIG. 43.—Smith's grooved catheter for cauterization of nasal mucous membrane by means of fuming nitric acid.

extremity has been provided with a more substantial handle. The figure (43) shows one of these instruments. I have done this operation on two occasions with the happiest results, and in both instances, before the operation was undertaken, other remedial means had proved almost useless.

Instead of making use of different methods of cauterization, Dr. Wm. C. Jarvis, of New York, prefers to cut off the infiltrated and redundant soft tissues covering the turbinated bones, by means of a wire noose. This he accomplishes readily and very successfully with an ingenious instrument (fig. 44) of his own inven-

tion which may be described as follows: It consists of a small straight canula seven inches in length, which can be partially bent in different directions, and used as a probe. The exterior surface of two-thirds the length of the canula is smooth, the other third has a screw-thread upon it. Over this latter portion, another canula with smooth outer surface, but somewhat larger in calibre and grooved inside to prevent circular movement, is passed. At its proximate extremity there are two small retention pins in metal. Upon the screw-thread a milled button is fixed, by turning which it gradually runs up the thread and pushes before it the movable canula. The double wire is drawn through the

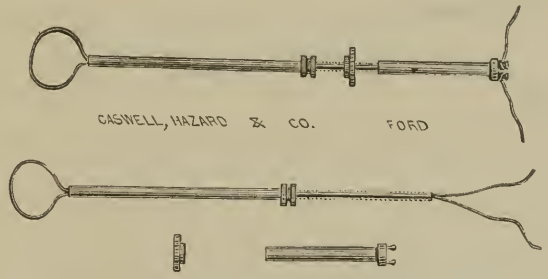

FIG. 44.—Wire snare nasal écraseur (Jarvis).

first canula from end to end, leaving a noose of any desired size at its distal extremity, while at the other extremity the two ends of the wire should be twisted firmly around the retention pins. The wire noose may be retained in any position, after the proper dimensions are given to it, by flattening it out slightly on either side against the extremity of the canula and by making one or more turns of the milled button. Dr. Jarvis claims for his instrument, and I believe with much reason: 1st, its simplicity; 2d, its practical and easy manipulation. By its use he has already taken away, with but slight pain or hæmorrhage, masses of thickened soft tissues which completely blocked up the nasal fossæ

and rendered the breathing through them almost impossible. The instrument of which I have just given the description may be employed in the treatment of hypertrophied tissues over the turbinated bones, situated in the lower portion of the nasal passages, as far back as the posterior border of the septum. It is also perfectly adapted to the removal of gelatinous polypi of this region.

Evulsion of the mucous membrane is a second method of surgical cure; Gross speaks of tearing away the redundant mucous lining, and, if necessary, the middle turbinated bone itself. I

FIG. 45.—Forceps for removing hypertrophied mucous membrane.

formerly considered this method the readiest and most effectual one of accomplishing a radical cure. One case in which I made use of it, within a year, makes me urge caution in its adoption, since the after-effects of pain and swelling of the face on the side operated upon, with great pain and soreness, followed by abundant discharges from the nasal fossæ, were such as to be a source of considerable anxiety to me during many days. A suitable instrument for the performance of evulsion had been for a long while a desideratum with me. With this end in view, I had thought of various instruments which might fully reply to apparent indications. After a time, the simple one represented in the accompanying woodcut (fig. 45) was made for me, and in four operations in which it has been employed the result has been signally beneficial to the patient. The jaws of the forceps (which should be made heavier than they are drawn) are grooved

in the centre and serrated on the edges, and for this reason better adapted to catching hold of and retaining in their grasp the infiltrated mucous covering. When a firm hold is had of the pituitary membrane after the introduction of the forceps, it is essential to twist them once or twice on their long axis, ever holding them tightly shut, before withdrawing them. Rarely do we then fail to accomplish the tearing away of a fairly large strip of the lining membrane of the nose. There is usually a sudden and rather large loss of blood after this procedure, but in a few moments, under the influence of cold injections, it will entirely cease and need not occasion the slightest alarm. It is well, however, after washing out the nasal fossæ, to plug them for a day or two with oiled lint, and thus be assured that the inflammatory swelling of the parts will be kept down. One operation will not usually suffice, and we shall be obliged to recur a second or even a third time to the use of the forceps. But as it is only moderately painful, and the after-bleeding is useful by depleting the diseased parts, I see no reason why it should not be repeated. Of course, pusillanimous patients will dread this, as they would any other surgical operation. In such cases, we may with propriety give small doses of ether by inhalation, before practising evulsion. The operation as described has in its favor the fact that it, or some very similar one, will lead to ultimate recovery in cases of excessive increase of tissue over the turbinated bones.

General Treatment.—In regard to internal treatment, I have little to add to what I said in speaking of it in chronic coryza. At times a useful adjunct, when judiciously given with due consideration of the diathetic condition present, it is probably of less obvious benefit in advanced hypertrophy of the soft tissues over the turbinated bones than it is in simple chronic coryza, where the thickening is very moderate. I attribute this want of influ-

ence of internal medication to the fact that the soft tissues of the nose have become much less capable of being influenced by remedies which can only affect them through their vascular supply, or by the instrumentality of glandular secretions which are in these cases much altered.

CHAPTER IX.

FOLLICULAR DISEASE OF THE NASO-PHARYNGEAL SPACE (POST-NASAL CATARRH).

The disease which gives the title to this chapter has been a subject of much thought and investigation to every practitioner who has devoted himself to the study of throat affections. By some, post-nasal catarrh is merely considered to be a more or less chronic inflammatory condition of the naso-pharyngeal space. In many patients it appears to them to be the result of a propagation backwards of a simple chronic coryza, or upwards of a simple chronic pharyngitis. A few only, recognize that it is the same disease as follicular disease of the pharynx, only differing from the latter by its localization and certain special symptoms which are the consequence of this seat. The reasons why this last-named and correct view of the disease is not generally adopted would seem to be: 1st, because the symptoms of follicular disease of the naso-pharyngeal space at times manifest themselves when the patient has not been conscious of previous throat disease; 2d, because in some cases there is no follicular disease of the middle and lower pharynx; 3d, because, without doubt, frequent attacks of acute coryza, which occasion simple chronic coryza, also tend to produce chronic inflammatory disease of the follicles of the naso-pharyngeal space. In reply to this I would state that the symptoms, results of treatment, and analogy with special morbid conditions of the laryngo-bronchic and stomacho-intestinal tracts sustain the conviction, first, that catarrh of the post-nasal passages is merely a

local determination of a diathetic condition. Second, that it is essentially the same condition with chronic follicular disease of the throat and remaining portion of the air passages. Anatomical researches have been rarely attempted in this disease, mainly because of the difficulty of reaching the diseased parts, and also owing to the fact that this affection never directly causes death. Whenever patients have died of other intercurrent, acute, or chronic disease, the latter predominates the situation, and little or no attention is paid to the investigation of the primary affection; so we find our knowledge of this special catarrhal trouble is necessarily imperfect, and if we have not as yet a universally acknowledged belief of where the seat and what the nature of the malady really is, our dearth of pathological instruction will afford a partial explanation of it. In regard to the interpretation of this disease, it can also be affirmed that general pathology has been much ignored. Everywhere we find an evident desire to localize agencies which are at work, and to limit their action and effects to some one particular tissue or organ.

This is especially true of post-nasal catarrh, for without much regard to attendant circumstances, its presence is frequently accounted for by the influence of agents acting topically. It is then very naturally considered to be the offspring, as it were, of a reunion of accidental conditions, affecting one or more individuals of a number.

When, however, a disease becomes wide-spread, and affects a very large number of individuals, such an interpretation is inadequate, and we are obliged to recur to some special climateric or atmospheric influence, capable of being its efficient cause. This we accept already for many diseases, and most readily for those which are liable to become epidemic, extending themselves over large tracts of country, and attacking people of all sexes, ages, and conditions after a similar manner. And our belief still re-

mains to us, though numerous and accurate investigations with respect to the state of the prevailing atmosphere have not, as yet, discovered the contagium or infectious principle. Much of what precedes has its direct application to the study of follicular disease of the naso-pharyngeal space, as will be recognized further on, in considering more particularly the etiology of this affection.

Physical Characters.—Frequently, upon rhinoscopic examination of the posterior nares and vault of the pharynx, we find all these parts abnormally red, thus giving evidence of an increased capillary circulation. This is true of robust subjects, and when the disease is not yet of long standing. If, however, we compare the coloration posteriorly with that existing in the anterior nares, we shall ordinarily find the pituitary membrane redder in front than it is behind. As Browne remarks, this is no doubt due to the fact that there is in this region less submucous infiltration, on account of the intimate attachments of the mucous membrane to the solid structure beneath. But there is not always increased redness of the mucous membrane in the naso-pharyngeal space, for sometimes it is pale and dull-looking and is indicative of the condition of general anæmia which exists. Phthisical and scrofulous subjects are generally thus affected, but it may be found with simple imperfect nutrition. Usually the mucous membrane is notably thickened and a certain amount of submucous infiltration exists. This latter condition is apt to extend itself, and then affects the palate and pillars of the fauces. When it is very apparent on either or both sides of the septum narium posteriorly, it gives a special appearance to this region, which has been described as a separate disease (fig. 46). If the mucous membrane and submucous layer over the posterior extremities of the turbinated bones are also thickened, the meatuses will occasionally become almost occluded. But not only is the mucous covering thickened, but the glandular hyper-development is very marked.

The glands of the naso-pharyngeal space are continually excited to increased function by the presence of abnormal secretion, and are not long in becoming obviously hypertrophied, as may be recognized with the rhinoscopic mirror (fig. 47). In the majority of cases, the hypertrophic glandular condition remains circumscribed to the vault of the pharynx in its median portion, but it is no uncommon circumstance to find it developed also upon the lateral walls around the Eustachian orifices, upon the superior and posterior surface of the soft palate, and giving a mamillary aspect to the turbinated bones themselves. Even then, however, the most considerable morbid changes are situated on or about

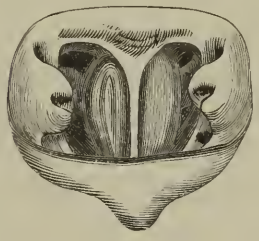

FIG. 46.

FIG 47.

FIG. 46.—Rhinoscopic image of œdema of nasal septum (Cohen).

FIG. 47.—Glandular hypertrophy at the vault of the pharynx with thickening of the soft tissues of posterior nasal septum (Browne).

the median portion of the basilar process. Although the employment of the rhinoscopic mirror will give us the best idea of the nature, number, size, and distinctive appearances of these enlarged and diseased glands, still examination by means of the right index finger should not be omitted. Occasionally, by passing this finger gently behind the palate, we can experience a rough mamillary sensation, as that of Russian leather, which is attributable to the condition described, and which alone may permit us

to make a diagnosis. It requires a very submissive patient and an accurate touch to diagnose after this manner any but much advanced stages of disease. The submucous infiltration of the side of the vomer might also be thus made out, but there would be many failures without the use of the rhinoscopic mirror. In very old cases of naso-pharyngeal follicular disease, the mucous membrane becomes much atrophied, the hyper-glandular development subsides, and there is diminished secretion from the affected regions. In this variety we are apt to have a somewhat glazed or dry appearance of the pharyngeal wall which extends itself sooner or later into the median portion of the pharynx. Ulcerations in the naso-pharyngeal space, upon the septum, or turbinated bones rarely exist except in syphilitic or strumous subjects; and when they do, their description, march, and complications properly belong to ulcerous coryza. I have seen, however, several times a grayish aspect of the posterior extremity of one or more turbinated bones which has deceived me for a while and made me believe in the existence of *ulcerations* where none in reality existed, as the future progress of the case conclusively showed. Sometimes we can see small ecchymoses upon or within the mucous membrane. Inspissated mucous is often found blocking up the Eustachian orifices, or filling the neighboring depressions. The lesions of follicular disease of the pharynx often accompany those just described, and we have numerous granulations with depressed mucus-covered interspaces, all over the posterior pharyngeal wall (figs. 48 and 49). Besides there are many enlarged and tortuous vessels winding over the infiltrated and inflamed surface of the pharynx, pillars of the fauces, etc. The aspect of the former is often mottled, although of a predominating slate color, owing to the varied hue of its granulations.

Symptoms.—Follicular disease of the naso-pharyngeal space is

characterized by two constant symptoms: first, a sensation of stuffiness, or oppressive fullness in the superior and posterior portion of the nasal passages; second, the falling down from above the palate and from the posterior nares of a greater or less quantity of mucus which, according to the age, extent, and severity of the disease, may also vary in physical characters. It may consist of small, starchy pellets or masses of viscid, tenacious, and almost colorless secretion, without odor, which are surrounded by a foamy, aërated expectoration, or of larger, heavier, yellow, or greenish mussel-like conglomerations of an essentially muco-purulent nature. All other symptoms (and their name is legion)

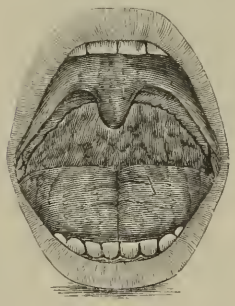

FIG. 48.

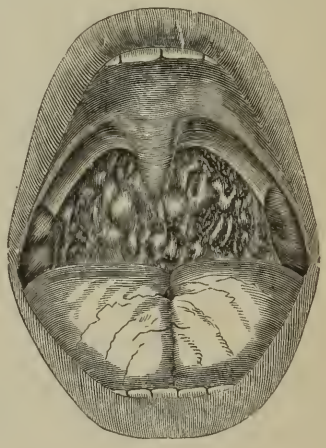

FIG. 49.

FIG. 48.—Follicular pharyngitis (Cohen).
FIG. 49.—Follicular pharyngitis at a more advanced stage (Cohen).

generally attributed to post-nasal catarrh may or may not be present, and at all events are certainly never pathognomonic of it. The symptom stuffiness is without doubt occasioned in great part by the presence of the sputa just mentioned, though it is frequently aggravated or rendered more intolerable by concomitant hypertrophy of the turbinated bones. At times, masses of morbid

secretion are seen trickling slowly down the post-pharyngeal wall. These become visible by simple inspection when the mouth is moderately distended. In less advanced stages, in order to render their existence apparent, it is necessary to make use of the rhinoscopic mirror. We shall then perceive them as they hang down from the fornix or roof of the vault, or from the superior limit of the septum or posterior nares, and somewhat resembling stalactites suspended from the roof and walls of a subterranean grotto. The outline of these parts is partially obscured or almost hidden from view, and the posterior nares themselves are in part blocked up. This is carried to such an extent in certain instances that we comprehend with some difficulty how respiration is carried on through the nasal passages. And surely in these examples there is little or no difficulty in convincing ourselves of the essential feature of the disease, or indeed of the main source of the unpleasant sensations experienced.

These masses of mucus, or of muco-pus, at first contain a certain quantity of watery fluid, and are of semi-solid consistence. They are then less adherent to the adjacent parts, and if they do not separate themselves from them little by little, and fall down into the median portion of the throat, they may be roughly torn away from their attachments by one or more efforts of hawking.

After a longer or shorter period of time, usually, however, when the disease has been in existence and uncared-for during several years, the masses of mucus or muco-pus become hardened, concrete, and inspissated while still in contact with the mucous membrane. And the membrane itself having lost in a great measure its normal amount of sensibility, the patient becomes less aware of, or less disturbed by, their continued presence. Active efforts are not made to detach and expel them when first formed, and they go on accumulating upon

their primitive seat. Having this fact in view, it is very easy to account for their hardening. Remaining in situ for quite a period of time, or estimated roughly from twenty-four hours to a lapse of several days, they lose their watery constituents—and this is effected by the evaporation which takes place in their composition, and which is due to the frequent passage of the inspired and expired air through the nasal cavities. This hardening process is not the only evil attendant upon their remaining in place. These masses take on a bad odor, become fetid and most offensive to taste and smell. The repulsive odor is a result of decomposition and can only be relieved by a long continued course of appropriate treatment, of which the disinfectants are the main class of agents to be employed. Again the hardened masses of mucus finally act like foreign bodies of an irritating nature, which have remained for a considerable time in contact with an organized and sensitive membrane. They are apt to increase a chronic inflammatory processus already present, and unless got rid of, will eventually, and fatally produce abrasion, and in rare cases (syphilitic, strumous, etc.) this abrasion of tissue will be an onward step towards ulcerative degeneration and necrosis.

There are frequent occasions, and though the *masses* of morbid secretion are visible by the aid of the rhinoscopic mirror, in the naso-pharyngeal space, when the patient is unable to hawk them into the back of his throat, so as to be able to spit them out, no matter what and how great his efforts are, and it is only after drinking or gargling the throat with some warm or bland fluid that the glandular secretion is increased so rapidly, and with such good effect, that relatively old secretions are separated from the parts to which they were previously adherent, and fall into a region where they are under the dominion of the voluntary muscles, and can be altogether and quickly expelled from the body.

The mucous or muco-purulent secretion is the product, to a great extent, of the glandular follicles situated at the vault and on the lateral walls of the upper portion of the pharynx, and also on both sides of the posterior border of the septum, and on the posterior extremities of the turbinated bones. At times, and in small proportion, it would seem that the glands situated in the posterior ethmoidal cells gave rise to a certain amount of the morbid secretion, as is evinced in a measure by the falling down of stringy mucus behind the palate, more especially when the patient is in the dorsal decubitus. For this reason we often hear patients complain of their inability to sleep comfortably at night, owing to masses of thick phlegm which fall into their throat, which cause choking sensations and which render it necessary for them to sit up quickly and make repeated efforts of hawking until they are able to clear their throat by expectoration of a quantity of thick mucus.

Case.—Not long ago I was called to see a boy of six years of age, with the following symptoms. During the day the boy was to all appearances perfectly well, except perhaps a slight, stuffy feeling in the nose. He would go to bed each night at seven or eight o'clock and sleep quietly until two A.M. At that hour he would awaken suddenly with great distress of breathing, seem as if he were about to strangle, and have repeated, hoarse cough. After fifteen to twenty minutes all became quiet and the child went to sleep again.

I found these attacks were due to a mass of inspissated mucus which became fixed in the naso-pharyngeal space, and before it could be detached, caused the above distressing symptoms. When the separated phlegm was either expectorated or swallowed, immediate relief was obtained. Many sufferers are unable to talk for any great length of time, as during a dinner party or evening entertainment, without being compelled to clear their throat

repeatedly. I have known ladies so much annoyed by this unpleasant condition that they preferred to remain at home rather than to go out and be subjected to what is to them a very mortifying circumstance. In public places, churches, theatres, meetings, in the street, or at home, an individual who is tormented with an aggravated form of post-nasal catarrh is continually obliged to scrape his throat and expectorate. And no sooner is one pellet of mucus spat out than another takes its place, so that persons thus affected are not only sufferers themselves, but also cause at times great annoyance to those about them. No doubt this symptom of hawking is to a certain extent increased by a bad habit acquired, and that the irritation occasioned by their repeated efforts will augment the irritation of the naso-pharynx, so that a greater quantity of mucus is secreted. Still this *symptom* cannot be wholly avoided by the strongest desire to do so, and must be considered in part necessity. Inasmuch as histological research informs us that the ethmoidal sinuses contain very few mucous follicles, even though we may admit that these become or are diseased, we cannot admit that their existence and diseased condition would be sufficient to explain the amount of mucus secreted, unless the other follicles already mentioned have also a share, and a much more important one, in occasioning the disagreeable symptoms of the disease. If, as is often the case, the sense of obstruction is located, by the patient's subjective sensations, in the middle and anterior portions of the nasal passages, it proceeds probably, in great part, from moderate temporary or permanent infiltration of the mucous or sub-mucous layers. A quantity of inspissated mucus in masses or crusts may, however, augment the obstruction, and forcible blowing of the nose will then bring some alleviation for a time to the patient's unpleasant sensations. Rarely in an uncomplicated case of post-nasal catarrh does one observe more than a moderate quantity of altered nasal

secretions in what the patient blows from his nose. This is to be accounted for by the fact that the glandular follicles of the pituitary membrane, properly speaking, do not secrete in this affection nearly so much viscid mucus as those which are situated in the posterior regions.

It is not infrequent to find more or less intense headache as an accompaniment of post-nasal catarrh. When this affection is limited to the naso-pharyngeal space, the pain of the head is limited to the occipital region. When, however, the disease is complicated with chronic rhinitis, affecting the middle and anterior portions of the nasal passages, the headache is frontal as to its seat and is supposed to indicate, when fixed at the root of the nose or over the *inner* aspect of the eye-brows, an inflammatory extension to the frontal sinuses. In my experience, this frontal headache, when it is very intense, has usually been determined by bad methods of treatment. At times and unquestionably the odor of the expired breath is nauseous in the extreme. These are not the ordinary cases, for whilst many individuals suffering from post-nasal catarrh of moderate intensity will have a certain amount of disagreeable odor in their expired breath in the morning on rising, or after a prolonged fast, it is rarely so offensive as they suppose and unless one is conversing with them in very close proximity is not really noticeable. Ladies especially suffer morally very much more from the belief under such circumstances that their breath is foul and that they have become unpleasant on this account to their friends, or to persons living in the same room with them. As far as may be possible and truthful, it is only right to relieve the minds of such patients, because otherwise they become oftentimes excessively morbid and hypochondriacal. Moreover, we have therapeutic means which are capable of making this symptom disappear and to which I shall refer under the head of treatment.

Other frequent symptoms of naso-pharyngeal catarrh are those which are frequently attributed to atonic dyspepsia, *i. e.*, bad taste in the mouth, furred tongue, loss of appetite, etc. Now I do not mean to affirm that dyspepsia does not frequently precede, accompany, or indeed aggravate an existing chronic catarrh of the naso-pharyngeal space; for of the contrary I am well assured. I believe it is very important, however, for all practitioners to keep in mind that there is no more frequent sufficient cause of many dyspeptic symptoms, in fact of dyspepsia itself, with its one and a thousand ills and disagreeable features, than the disease I am considering, and it is only by the judicious treatment in such examples of the catarrhal condition of the naso-pharynx that we are able finally to conquer completely the dyspepsia. Occasionally, patients have the greatest difficulty in hawking down the inspissated mucus which has accumulated in, and become very adherent to, the vault of the pharynx. This occurs most frequently in the morning shortly after rising. Time and again I have known a patient's efforts to expectorate these hardened secretions become so great as to occasion actual vomiting of very distressing character. Under like circumstances it is not unusual to find the hardened secretions from the pharyngeal vault streaked with blood or bearing a strong resemblance to the sputa of an individual affected with pneumonia. Certain patients do not expectorate frequently or abundantly. From time to time, however, at regular intervals (sometimes every day, every other day, after the lapse of a week or more), suddenly without provocation a hard, brownish or greenish fetid mass of inspissated mucus, epithelium, pus, blood, etc., detaches itself from the fornix, and soon produces a choking sensation by its further descent into the pharynx. Violent and repeated efforts of blowing, hawking, and coughing are made, and finally, after a few moments usually, the offensive mass is expectorated from the mouth, to

the great relief of the sufferer. These hardened secretions frequently have the configuration of the parts from which they have become separated, *i. e.*, fossæ of Rosenmüller, the pavilions of the Eustachian tubes, depressions at the vault of the pharynx, posterior extremities of turbinated bones, etc.

Complications.—Hypertrophy of the soft tissues which cover the turbinated bones, when it is considerable or excessive, is not in my opinion a condition which belongs to the usual march of post-nasal catarrh. It should, on the contrary, be estimated as a sequela or complication which is frequently due to the catarrh, frequently also, though not always, brought on by faulty and pernicious methods of treatment. It is likewise one which lends additional trouble and gravity to the follicular affection of the naso-pharyngeal space. And just as its anatomical seat and conditions are unlike, so its cure must be attempted after a somewhat different plan. Whenever the portion of the pituitary membrane covering the middle and anterior portions of the septum and turbinated bones becomes so much thickened as to produce contact between these boundary walls of the fossæ, *mutual compression* may become sufficient to obliterate almost completely the external orifices of the follicles, and thus to diminish or cut off altogether the outflow of glandular secretion. No doubt, therefore, the sensation of dryness which old catarrhal patients have is accentuated in part owing to this fact, and also by the blocking up of the nasal ducts, which prevents the tears from flowing by them into the nasal fossæ, and thus effecting their lubrifying influence. This obstruction of the nasal ducts is usually occasioned by the propagation of the catarrhal inflammation to them from the pituitary membrane. Unfortunately there are frequent instances in which it does not arrest its onward march here, but extends itself through the lachrymal sac to the palpebral and ocular conjunctiva. I am satisfied

that this mode of origin of many cases of conjunctivitis is ignored, and as a consequence no attention is paid by the oculist to the treatment of the pituitary membrane, which, if properly carried out as an adjunct to direct ocular applications, would undoubtedly lessen the duration and intensity of such cases. In speaking of hypertrophy of turbinated bones, I have insisted upon its injurious effects upon the hearing power of many persons. It is unfortunately true, moreover, that follicular disease of the naso-pharynx, even though it be unassociated with any notable degree of hypertrophy of the turbinated bones, may also lead to serious impairment of hearing.

In certain instances, the glandular enlargement involves the proximity of the Eustachian orifices and finally ends by implicating these openings themselves, and more or less completely blocking up their calibre. In more numerous examples, it would appear as if the sub-acute or chronic aural catarrh which follows in the wake of chronic follicular disease of the naso-pharyngeal space were merely the direct result of the propagation of the catarrhal inflammation through the Eustachian tubes into the middle ear which, according to Tröltsch, occasions slight paralysis of the dilator muscles of the Eustachian orifices. At first the patient has only now and then some uneasy sensations in one or other ear which impel him to introduce his little finger in the external meatus and endeavor to get rid of a foreign body; a little later the power of distinguishing certain tones or sounds is diminished and the patient has become slightly deaf. If under these circumstances the ears be occasionally inflated with a Politzer's bag, and at the same time the naso-pharynx is properly medicated, no further trouble need be apprehended, and the patient will get almost, if not entirely well, in so far as impairment of hearing is concerned. If this condition is permitted to remain without such treatment, the future is dark indeed, for

he will slowly though surely become irremediably deaf. Fortunately such sad instances are rarely met with, as most persons nowadays prefer to seek special medical advice before such results have occurred.

Nothing is more frequent, as we know, than to find concomitant lesions of follicular pharyngitis which is either the origin or propagation downwards of the follicular disease of the naso-pharyngeal space. Then we can perceive, by direct examination of the throat with the unaided vision, granulations in a more or less marked degree and separated in places by dilated varicose veins, either on the pharynx, velum, pillars of the fauces, tonsils, or in fact upon all these parts. Sometimes these small glistening bodies are no larger than the head of an ordinary pin, and resemble so many minute vesicles of herpes covered over with a coating of thick mucus, somewhat grayish in coloration, or else with a foamy, aërated, spumous secretion, less viscid and of whitish tinge, like that which comes from the bronchial tubes at the commencement of an acute inflammation of these latter structures. We have seen these glistening bodies, especially when limited to the organs above mentioned, and of small size, without concomitant trouble in the naso-pharyngeal space; or in the mucous lining of the inferior portion of the pharynx, or of the larynx itself. Frequently, however, these granulations appear to be but the continuation of a more or less similar condition which exists in even an exaggerated degree above the soft palate. They are then very much enlarged and of different shapes, rounded, oval, oblong in a vertical direction, etc. Accompanying the morbid condition of the pharyngeal follicles we frequently have a considerable degree of elongation and infiltration of the uvula which is a constant source of uneasy sensations of different kinds, *i. e.*, tickling in the throat, sensation of a foreign body which the patient is endeavoring from time to time to rid himself of by an effort of

deglutition, etc. Moreover, this elongated uvula is very apt to repose on the base of the tongue, particularly when the patient is in a reclining position, and to produce obstinate cough, which is sometimes only effectually arrested by removal of a portion of it. The pillars of the fauces are infiltrated, thickened, and relaxed and between them, on either side, we find oftentimes a somewhat enlarged, spongy-looking tonsil dotted here and there with white points which are the visible evidence of cheesy deposits within the lacunæ. Such tonsils keep up a morbid condition of the throat and naso-pharynx, and in order to be cured require repeated cauterizations with nitrate of silver fused upon the end of an aluminium probe, and introduced into the lacunæ, either before or after partial excision of their mass.

Chronic follicular disease of the naso-pharyngeal space may occasion dysphonia when the condition of the larynx cannot account for imperfect speech. And this impairment of voice has been notably benefited by active treatment of the naso-pharyngeal space without any attention in the way of therapeutics being directed to the vocal organ. Such an instance has been reported by me in the January number of the *Am. Jl. of Med. Sciences* for 1876. The result in this case proved the correctness of the belief I had formed, that the trunks of the pneumogastric nerves which lie adjacent to the pharyngeal walls in their superior portion were involved by propagation of the chronic inflammatory processes accompanying follicular disease so evidently existing in the neighboring parts. Thus we perceive that, in chronic follicular disease of the naso-pharyngeal space, the voice may be and is affected at times, when no visible structural lesion exists within the larynx itself. This morbid influence may depend upon chronic inflammation of the nerve trunks. Of course, catarrhal patients, like other patients, may have *ulcerations* of the septum, turbinated bones, and fornix; but we must then always be on the lookout for

other distinct evidences of constitutional syphilitic poisoning, of profound strumous cachexia, or poisoning from the virus of glanders, or the long-continued absorption of some injurious substance, inorganic or vegetable. Vegetations, polypi, tumors of divers sorts may take rise from different points of the pituitary membrane. Never should these outgrowths or heterogeneous productions of tissue be regarded as forming part of the normal march of follicular disease of the naso-pharynx. They are always and invariably complications, the diagnosis of which should be made separately and with all accuracy possible; for they will often give rise to somewhat similar symptoms with the simple follicular affection, and are frequently, through ignorance or want of attention, confounded with it.

Duration, Termination, Prognosis.—Follicular disease of the naso-pharyngeal space is essentially chronic in its march. Once firmly seated in the mucous membrane lining this cavity, it holds itself there with great tenacity. It shows no tendency whatsoever to get well of itself, in the majority of instances. And although it is true that with a vigorous constitution and attention to the general hygienic indications upon which so much emphasis has already been laid in one of the preceding chapters of this work, this disease may be to a certain extent thrown off, in all those instances I have encountered it has required prolonged and systematic medication to perfect a cure. If left to itself, post-nasal catarrh will finish by propagating its baleful influence to many of the cavities connected with the nasal fossæ, and will, as we have clearly seen, occasion, by its complications or through itself, impairment or loss of hearing, diminution in the sense of smell or complete anosmia, blunted taste, catarrhal troubles of the eyes and weakened eyesight, neuralgia of certain branches of the fifth pair of cranial nerves, obstinate and painful headache, etc. Amongst these functional troubles, the implication of the

organ of hearing and more or less complete impairment of hearing power, as it is one of the most frequent determinations of the disease, so it is one of the most important to begin treatment with at an early date. Besides all the troublesome affections to which I have referred, and which render follicular disease of the naso-pharynx a serious and important affection, I would add that, with this affection of the throat existing in an aggravated form, the appetite is apt to be very capricious, small, and general mal-nutrition is an immediate or direct consequence. With many persons already, it has made it readily possible for them to imbibe the seeds of diphtheria, scarlatina, and other contagious diseases which have such *marked* local manifestations on the mucous membrane which covers the pharynx, fauces, and tonsils. But this is not all. Undoubtedly the patient affected with long-standing follicular disease of the naso-pharyngeal space, sooner or later, develops this same follicular disease of the remaining portions of the respiratory tract; of the pharynx at its middle and lower portions first of all; then of the larynx, and finally of the bronchial tubes. Hence comes, I am now thoroughly convinced, the initial stage in certain instances of what afterwards develops into different forms of pulmonary phthisis. Of these the purely catarrhal one is by all odds the most frequent, nevertheless I am satisfied that such patients occasionally develop miliary tubercles which had previously remained latent and unsuspected.

Etiology.—Formerly, as our ancient authors who were of the period of Galen and Hippocrates inform us, inflammatory conditions of the pituitary membrane were believed to originate in the brain itself, and the watery, mucous, or purulent secretions which came from the nasal passages were said to descend from above, and to be a product of secretion of the diseased nerve-cells of central origin. Much later on in medical history, and owing to

the exhaustive researches of Schneider, this erroneous idea of the first fathers in the art of healing was abandoned, and it was admitted of all, that ordinary cold in the head was a disease of the blood, and that the morbid secretions came from the small blood-vessels of the pituitary membrane. No further back than half a century ago, the medical world was divided between those who considered all catarrhal inflammations, without regard to their localizations, as being manifestations of a general constitutional condition, and equally famous writers who considered them as purely inflammatory in character, and caused only by external influences. In our day, the latter opinion has, perhaps, been the more prevailing one, and such eminent scientists as Niemeyer have scouted the idea of nasal *catarrh* being aught else than local in its nature and its cause, and just as we are informed that exposure of the head to a cold or humid wind with insufficient covering will surely produce an acute coryza, or wetting of the feet a case of catarrhal laryngitis, so we are told that an infusion of elder-flowers and a flannel undershirt will rid one of either or of both. Great illustrations of an antagonistic pathological school in France, like Mouneret, Chauffard, Jaccoud, Bouillaud, have bravely entered the lists in favor of their own—*not* less authorized or less well-defended belief. So the problem rests in abeyance, and it is for the future to determine which of the contending parties is right. In a question where clinical experience must of necessity be our main reliance, the wise interpretation of this experience will eventually give us the solution.

In New York, Boston and Philadelphia, in many of our Western cities, on the sea-shore and in the interior, in fact, over widely extended and very different sections of our country, post-nasal catarrh prevails to an extent which originates much inquiry, and occasions more than passing anxiety to those who have observed its course. Vast numbers of people are already affected with it.

Men, women, and children are alike its prey. All ages and professions are subjected to its symptoms and complications. Moderate differences or changes of climate only partially affect its growth; for while in individual instances its onward and rapidly progressive march appears to be somewhat delayed, if not completely arrested, by breathing a high, equable, and dry atmosphere, or by the respiration of air impregnated with balsamic odors, other and numerous examples there are when, once the catarrhal affection has become firmly seated, but little influenced for the better by the most rational hygiene and an ambient medium, seemingly the most perfectly adapted to their individual needs. Usually speaking, however, a cold, damp atmosphere, subject to sudden and great changes of temperature, is supposed to be a general and efficient, if not exclusive, cause of the production and extension of post-nasal catarrh. No doubt this accepted belief has some basis in fact, and yet the more closely I have been able to investigate the subject, in its multiple aspects, the more thoroughly am I persuaded that the received opinion is in part erroneous.

The development of the malady is not much affected by habit or occupations, and strong and weak organizations are similarly attacked. No constitution is entirely exempt, but certain persons are more disposed to contract it than others.

While I believe, therefore, that certain accidental conditions may be instrumental in its manifestation in the first instance, I am convinced, in an equal measure, unless a special constitutional tendency exists in the individual, that he will but rarely take it, and develop it to any very great and annoying degree. Post-nasal catarrh must not be confounded, as it almost universally is, with ordinary rhinitis. It is not simply an acute or chronic inflammatory condition of the pituitary membrane, nor should it, therefore, be treated in the same way; for if it is, signal

failure almost will follow our every effort. An acute or chronic coryza is, without doubt, a predisposing and, at times, a proximate and partially efficient cause of its becoming manifest. But in order to effect the grafting of post-nasal catarrh upon the nasal and pharyngeal mucous linings in a permanent manner, a certain diathetic condition is essential. The affection has existed, so to speak, in germ previously, when by reason of one or more attacks of cold it takes on its full growth, and from *latent*, that it was, it is rendered obvious, as regards both its pathology and symptoms, to whoever will inquire diligently for its signs and their clear signification.

The diathesis which is present is called, for lack of a better term, "catarrhal." In many instances, however, there would appear to be some relation existing between the granular condition of the naso-pharyngeal space and the herpetic disposition so frequently manifesting itself by eruptions upon the integument; and just as the man who bears this latter in his system avoids eating shell fish, cheese, salt meat, spices, and in fact all substances which have an irritating effect upon the skin, for fear lest an eczema, psoriasis, pityriasis, etc., may be very much aggravated by indulgence in dishes formed largely of the above ingredients, so the use of tobacco or alcoholic stimulants, even in moderate quantities, exposure to a damp, cold atmosphere, to the inhalation of irritant and pernicious vapors, will always notably accentuate and increase the outward manifestations of the diathesis in which granulations of the naso-pharynx are so prominent a feature.

Contagion.—Many physicians of our day, and especially those who are too ardent advocates at the shrine of Germany, are prone to attribute to every clinical fact observed only the importance which, after close microscopic study, appears to belong to it. The general pathology or philosophy of medical science is much

ignored, and everywhere we find an evident desire to localize agencies which are at work and to limit their action and effects to some one particular tisssue or organ.

This is especially true of catarrhal affections; for without much regard to attendant circumstances, their presence is frequently accounted for by the influence of agents acting topically. They are then very naturally considered to be the offspring, as it were, of a reunion of accidental conditions, affecting one or more individuals of a number. When, however, a disease becomes widespread and affects a very large number of individuals, such an interpretation is inadequate, and we are obliged to recur to some special climateric or atmospheric influence capable of being its efficient cause. This we accept already for many diseases, and most readily for those which are liable to become epidemic, extending themselves over large tracts of country and attacking people of all sexes, ages, and conditions after a similar manner. And our belief still remains to us, though numerous and accurate investigations with respect to the condition of the prevailing atmosphere have not, as yet, found out the contagium or infectious principle. Much of what precedes has its direct application to the question of transmission of naso-pharyngeal disease. The question is frequently asked, is "catarrh" contagious? By it is usually meant the chronic form of post-nasal or naso-pharyngeal follicular disease; is it contagious? Whilst I am not familiar with any experiments of direct inoculation that have been made, and the question cannot therefore be categorically answered, I am of opinion, in the strict and limited use of the word contagious, or transmission of this disease by direct contact, that it may or may not be carried from one person to another, according to whether or not the constitutional condition is present which is essential to the grafting of the disease on the naso-pharyngeal mucous lining. I know of instances of persons suffering from an

aggravated form of naso-pharyngeal follicular disease, who have lived in close proximity (*i. e.*, a husband and wife) for many years, and yet the healthy individual primarily, has never become subject to this disease. I have also known examples in which I had good and even very powerful reasons to believe that this affection had been directly communicated to one who was, however, in an evident predisposed state to contract it. It is certain, however, that the *rôle* in the transmission of this affection, pertaining to certain special yet widely disseminated climateric influences, is a far more important one than that of the contagious noxa carried from one person to another. And in proof of this I would ask, How is it that a disease which is so prevalent in many sections of our country is certainly less known and familiar in England and on the continent? Certainly if the extensive propagation of this affection were merely a direct consequence of intimate contact, there would be just the same probabilities of the increase there as here.

Diagnosis.—Chronic follicular disease of the naso-pharyngeal space may be confounded with ulcerous coryza, adenoid vegetations at the vault of the pharynx, and mucous polypi of the posterior nares. From the first it can be differentiated by the absence of ozæna, the number of pus-cells in the discharges, and by the quantity and coloration of the crusts. Moreover, in *ulcerous coryza*, either syphilis, scrofula, glanders, metallic poisoning, the anterior existence of fever, accident, or a foreign body, etc., can usually be discovered by careful inquiry, as a sufficient cause of this disease. Of course, the *ulcers* themselves, when found, are pathognomonic of it. And even without the absolute certainty which the sight of the ulcers gives, we have a very strong proof of the presence of ulcerous coryza, when we find bits of necrosed bone in the nasal secretions, or that the nose has suddenly become flattened without obvious cause.

From adenoid vegetations, chronic follicular disease may be distinguished by the facial expression which is so peculiar in the former disease; by the imperfect pronunciation of nasal consonants which exists with adenoid vegetations; and by the signs furnished with the rhinoscopic mirror and by digital examination. From mucous polypi of the posterior nares, by the light gelatinous color and configuration of these polypi, which as seen in the rhinoscopic mirror, when they fill up one or both posterior nares, are almost pathognomonic. If the polypi extend further in a downward direction, and rest on the soft palate, their size, situation, and points of insertion can be best appreciated by examination with the right index finger.

Varieties.—Properly speaking, I only recognize two forms of chronic follicular disease of the naso-pharyngeal space, and these are: 1st. The form I have described and which, for distinction, might be termed, in many instances, *chronic hypertrophic follicular disease* of the naso-pharynx. 2d. *Chronic atrophic follicular disease* of the naso-pharynx. In this latter form of disease, there is, indeed, a certain degree of atrophy present in very many instances.

Never is this observed in cases that are not already of long standing. It is likewise true that we usually encounter it amongst adults. I have also found a notable atrophy of tissue in the naso-pharyngeal space amongst children, who at the same time were profoundly anæmic and suffering from constitutional blood dyscrasia, occasioned by scrofula, phthisis, or syphilis. Upon examination by means of the small mirror, the naso-pharyngeal space in these instances is found to be more capacious than usual. The posterior border of the septum is thinner, the Eustachian tubes more prominent, the fossæ of Rosenmüller deeper, the mucous membrane thinned, and the glandular enlargement less marked than in the ordinary from of post-nasal catarrh. Instead

of an increase of secretion in or from the naso-pharyngeal space, there is usually a marked diminution of its quantity. The patient complains of dryness of the nose and throat, and indeed the whole pituitary lining, as well as that covering the naso-pharyngeal space and the middle and lower pharynx, is dry-red and parched in appearance. These are the cases in which we notice too frequently the glazed appearance of the lower post-pharyngeal wall which is described as pharyngitis sicca, and which almost always indicates old, atrophic disease. In very numerous instances, it is accompanied by an exhaled breath which is unusually fetid, although not often having the unbearable character of true ozæna. According to some there is a *third* variety, and which Wendt* calls hyperplastic catarrh of the naso-pharyngeal cavity, and which is, as described by him in its less aggravated forms, merely an exaggerated phase of ordinary chronic follicular disease of this region. In its more typical forms this so-called "hyperplastic catarrh" is in reality the disease known as "adenoid vegetations of the vault of the pharynx" which has been so exhaustively described by Wilhelm Meyer.† When the former condition exists, I have found the mucous membrane of the naso-pharyngeal space much thickened and of more than ordinary consistence. The glandular development in this region is very considerable. Usually each follicle is semi-globular and ranges in size from that of a mustard-seed to that of a split-pea. Rarely, I have noticed them somewhat fimbriated. I have never been able, however, to distinguish the conditions of enormous glandular development, so fully described by many foreign writers. When the glands are very large and closely juxtaposed, they, together with the thickened mucous membrane, block up the naso-pharynx very notably, render the breathing at times through the nasal passages

* Cyclopædia of Practice of Medicine, Ziemssen, Vol. VII., p. 87.

† Proceedings of the Royal Med. Chir. Soc., Oct. 18th, 1869.

difficult, and compress the Eustachian orifices to such a degree as to occasion considerable impairment of hearing.

Treatment.—Hitherto the treatment of chronic follicular disease of the naso-pharyngeal space has proved most unsatisfactory to the majority of medical practitioners. And even to professed throat specialists there would appear to be no particular method of cure which meets with general approval. There are, indeed, a few of our colleagues who boldly affirm that they have cured many cases of long standing, and which to other practitioners have shown themselves refractory to all ordinary therapeutic methods. And this may be accomplished, they tell us, in a very rapid manner, by means of caustic solutions applied to all those parts which are the seat of the morbid processus. Unfortunately these remedies which are so efficacious in the hands of a few have not been equally useful when tried by others in cases apparently altogether similar. This fact has produced scepticism in many minds, with respect to the utility of mere local measures of relief; and numerous specialists now admit the necessity of general medication, adjoined to topical applications, if we may fairly look to a permanent recovery from this disease. These latter, however, are not inclined to underestimate the difficulty of obtaining this result; on the contrary, they acknowledge, though with unfeigned regret, that their best directed efforts are at times completely baffled. Such testimony on the part of men who possess high professional qualifications goes to corroborate the assertion that the true treatment of post-nasal catarrh is still unknown. I also, in company with several of my contemporaries, held this belief. At present I am less inclined to make a like admission. Without doubt, many points in regard to its march and terminations are still ambiguous, and research and study are required to unravel what is obscure. Nevertheless I feel confident that something real in the way of progress has been acquired, and the goal to-

wards which many are directing their efforts is not so far removed as formerly. At first, in my treatment of post-nasal catarrh, I made use of those remedies, both local and systemic, which are usually employed. Little by little my faith was shaken, and methods received and put in requisition for a time as useful were afterwards entirely abandoned. Some there were so well adapted to the obvious remedial indications that I was loth to throw them aside, believing that I held the panacea of a distressing infirmity. More than once my sanguine anticipations have been disappointed, and though to-day my appreciation of what I shall offer in the following pages is tempered by my remembrance of former erroneous convictions, I trust my experience has not been without bearing some good fruit. From all that precedes one can appreciate to what unfortunate results bad treatment will infallibly lead. Take, for example, the old-time practitioner, or even one of later date, but who is not familiar with recent methods of examination, and see how he must of necessity fail of exact interpretation and sound treatment of maladies respecting which he labors in the dark. Every trouble of the nose or throat which gives rise to those symptoms, marked as essential, are to him pathognomonic of catarrh, unless he is able with his unaided vision to distinguish other pathological conditions. Manifestly therefore, if he be bold enough to go on with the care of his patient, though he can have made but a very imperfect and inaccurate diagnosis, he will, in many instances, fail to accomplish a cure, where a physician who can assign the *rôle* of each analogous or dissimilar state of organ would immediately place him under suitable treatment. And so in the one case the patient remains stationary, or goes on from bad to worse, whereas in the other he has the advantage of the last word of human science and skill, and will sooner or later establish a permanent recovery. When treatment is desirable, what are the in-

dications which should guide us in the selection of remedial agents for this disease ?

I. General Remedial Treatment.—Inasmuch as I believe that follicular disease of the naso-pharyngeal space is under the dependence of a general diathetic condition, I naturally consider systemic treatment of primary importance. Previous to the exhibition of medicaments, the beneficial effects of which upon a morbid condition of the air-passages are known, I bring into use, as a rule, one or more of those drugs noted for their corroborative power.

Iron, quinine, cod-liver oil, arsenic and strychnia have been severally employed on different occasions, and in variable doses. And I do this in the belief that many of my patients give evidence of anæmia, loss of flesh, or a general debilitated condition, in which the nervous system enters for its share. While, however, many old cases of catarrh are grafted upon a worn-out or broken-down state of the organism, where the drugs just mentioned are valuable adjuncts, there are frequent examples where the patient has been in the enjoyment of a fair amount of health, and there do *not* appear to exist marked indications for the employment of tonic treatment. In the first division, also, I merely attribute importance to strengthening measures, while I have in view the state of *general* health ; for their practical utility, looked at with regard to their local influence for good, is not at all times evident. True it is, nevertheless, that habitual cold bathing, a highly azotized food, plenty of exercise in the open air, aided by an occasional tonic treatment when the season is unusually trying, or normal health and vigor somewhat impaired by overwork or anxiety, will be able to ward off effectually for a while the pernicious effect of individual predisposition and climateric influences. But if post-nasal catarrh is permitted to become once firmly established, the two latter all-powerful factors of the disease will render complete recovery quite impossible, unless special,

general, and topical medication be employed both rationally and with system. The desiderata wished for in this connection are in my estimation: 1st, some one particular drug, or a combination of drugs, given internally in suitable doses and at well regulated intervals, which will affect in the best possible manner the glands and mucous linings of the throat and nose; 2d, a topical application which will answer like indications.

In order to discover, if possible, the first one of these much-wished and sought-for prizes, I have not thought it unworthy of patience and endeavor, on my part, to experiment with nearly all the known agents of the pharmacopœia, which are referred to as having a useful therapeutic effect upon mucous membranes in a diseased condition. Chlorate and iodide of potash; carbonate and muriate of ammonia; ammoniacum, guaiacum, ipecac, squills, sulphur, mercury, cubebs, copaiba, and still others have been faithfully and persistently tried by me in different typical cases, singly or in varied combination, and in large or small, continued or frequent doses.

Each one of the drugs named has appeared to be, in individual instances, of real advantage to the patient, and its beneficial effects have been of longer or shorter duration. I am intimately persuaded that occasional cures have been established; much more frequently, only temporary relief has resulted from their administration. Whenever what for *the time* was obviously a perfect recovery has taken place, local remedies have been employed concomitantly with general measures of treatment. Finding that my success was so variable, I have finally been led to the conviction that, while follicular disease is at times due to the catarrhal diathesis pure and simple, so it may be, and frequently is, attached to the gouty, herpetic, syphilitic, scrofulous, and tubercular. The malarial influence may likewise be evident, and antiperiodic remedies may then prove

to be of the greatest service, when other remedies fail entirely to produce good results. When any of the above constitutional conditions, which may be either hereditary or acquired, exist, manifest indications arise which we will do well to consider, and to some extent be influenced by them.

Before mentioning, however, the remedies I have put in requisition in these last-named cases, let me say a few words with respect to three medicaments which I believe will be found most useful in the treatment of follicular disease of the naso-pharyngeal space, where the patient is free from any other diathesis.

These three are sulphur, cubebs, and ammoniacum.

For quite a time I have given sulphur-water from the White Sulphur Spring of Sharon.* It has been taken in doses of a tumblerful three times a day, and several of my patients have acknowledged how instrumental it proved in ameliorating their condition.

There is nothing new assuredly to European observers, more particularly to the French, in the use and efficacy of sulphur in throat and bronchial troubles. In the United States, if one may be able fairly to judge the question by the perusal of special articles in our ordinary text-books, or those in contemporary medical periodicals, the same value is *not* attached to its employment in these cases. When it is made use of under the form of spray into the nasal passages, I do not believe that sulphur-water is anything like so beneficial in its results as when given by the stomach. For employed internally, we secure the advantageous effect of its elimination in part by the mucous

* During the past two years I have not prescribed this water, as it was at times difficult to obtain, and also because it was the cause of dyspepsia with some persons. This was doubtless due to the excess of sulphate of lime in its composition.

linings, and we avoid what I am convinced is frequently injurious, viz., the irritating and oft-repeated contact of solutions, composed in great part of water, through the nasal fossæ.

Cubebs is likewise a drug which stands very high in my estimation. *Alone*, it will be, in many instances, of very great assistance when other drugs have entirely failed in their effects, and combined with suitably formulated powders and solutions employed topically, it will cure, I am persuaded, a certain number of old and very obstinate cases of catarrhal trouble.

At first, I used the oleo-resin, and from the poor results I accomplished with this preparation I was disposed to consider the drug itself as much over-rated and relatively inert. Fortunately, I was induced some time ago, after the perusal of a remarkable pamphlet by Mr. Trideau, relative to its exhibition to patients attacked with toxic diphtheria, to try its effects when given in powder under the form of a mixture or confection, and in large doses continued for several weeks or months. If given for this last-mentioned period, it is well to interrupt its administration for a few days every two weeks, so as to allow the patient to recover from its too constant influence. The following is in my experience an excellent formula, which I can entirely recommend to those who desire to make a trial of cubebs in fresh-ground powder—

℞ Pulv. cubebæ..... ℥ ij.
Syrupi aurantii ..... ℥ iij.
Aq. menth. pip.... ℥ ij.
Aquæ..... ad ℥ viij. M.

S. A teaspoonful to be given every two or three hours—up to 8 or 10 teaspoonfuls in the 24 hours, depending upon the tolerance of the patient on the one hand, the amount of secretion on the other. Usually my patients have had no difficulty in taking the cubebs mixture. It may be given before, after, or

between meals; and although it causes at times some nausea and diarrhœa, or an erythematous or slightly papular eruption upon the skin, these phenomena are *not* frequently observed, nor at any time of such character as not to be immediately influenced favorably by giving the medicine in smaller doses, or putting a stop to its use altogether for a few days. Cubebs in nature is certainly eliminated from the system in part through the glands of the throat and nose. And these follicles are changed little by little by its persistent exhibition from a morbid to a healthly condition. The nature and amount of their secretion is modified. It becomes less and less in quantity, and besides loses its acrid effect and unpleasant, not to say offensive, odor.

Though its viscidity does not immediately disappear, this result will likewise be ultimately produced. The stuffiness and constant hawking will gradually be diminished, and the ability of breathing through the nasal cavities be somewhat improved. It also gives a sensation of freshness, which lasts for quite a time, to the mucous membrane of the nasal cavities; and to those who have had that disagreeable feeling of dryness of these parts, which is so often present with catarrh of the nose, this is no inconsiderable advantage.

In the third place, ammoniacum should not be omitted in this examination. When it is combined in *very* small doses (gr. i.–iij.), with analogous expectorants, such as ipecac and carbonate of ammonia, it will greatly lessen the amount of secretion. If, by the action of these combined drugs, this product should become too viscid and adherent, and the pharynx become raw and painful owing to repeated hawking, this inconvenience may be overcome by the occasional use of the carbolic and soda spray (hereinafter mentioned), and the mixture may, as a rule, be continued without interruption.

Whenever other influences than a purely catarrhal one are at work, general remedies may be employed with advantage. A certain number of such patients are obviously dominated by malaria. Their systems are literally poisoned by this dyscrasic affection, and it has manifested itself also upon the mucous membrane of the throat and nose. These individuals are not so often encountered as some practitioners affirm. They do occur, however, and whenever met with, are wisely treated by administering to them, either by itself or in conjunction with cubebs, moderately large doses of quinine, say from fifteen to thirty grains daily. Its influence for good in these instances is at times unmistakable. If, however, the poison from malaria is deep-seated, obstinate, and unaffected by the use of quinine, in suitable doses and for a long period, Fowler's solution may then be prescribed. At times this proves nearly as ineffectual. Under these circumstances I have had good reason to laud the efficacy of "Eau de la Bourboule (Source Choussy)." This is a natural arsenical water of France which has only been imported and employed latterly by physicians of New York City. I am told that one eminent dermatologist is also now making use of it with successful results. I can therefore believe that its employment is likewise indicated in those cases in which an obstinate post-nasal catarrh appears closely allied with the herpetic diathesis, which shows itself by the familiar cutaneous lesions of certain forms of psoriasis, eczema, etc. I have given it one hour after eating, in quantities of two to four ounces, three times a day, and have continued it for two weeks at a time. It is wiser to allow a short respite after this period, and to resume its administration in a few days or a week. In gouty patients, guaiacum, under the form of the ammoniated tincture, has, I believe, effected more than one cure. When syphilis exists, and without regard to the stage at which it has arrived, let small doses of mercury be given, more particularly

the bichloride or biniodide salt, and continued during many weeks and months. As regards the iodide of potash, I have little to say in its favor. I am fully aware that an active and beneficial influence in catarrhal affections of the air passages has been urgently claimed for it of late, by more than one eminent practitioner of medicine. To this I cannot subscribe, in so far as my experience goes, with respect to its use in follicular disease of the post-nasal space. True it is, when first given, it lessens the viscidity of the secretion from these parts, as do other salts of the alkalies, and congests or inflames them in a very obvious manner. When taken for one or more days consecutively and in moderately large doses, it will usually produce a very red and swollen condition of the mucous membrane of the nasal passages. The nose will become so much stopped up as to interfere with normal respiration through the nasal fossæ, and thus cause a great deal of annoyance. Subsequently there is a considerable transudation of watery fluid from the vessels of the pituitary membrane, and increased discharge from the glandular follicles. The habitual symptoms of an acute attack of coryza are established, and all of its disagreeable features are occasionally highly accentuated. If the iodide be continued at the same dose, this manifestation of iodism may remain for some time, or else subside gradually after a few days. In either case, and when after thorough and prolonged trial this medicine is altogether abandoned, I have remarked but very infrequently that the post-nasal catarrh had been at all benefited. And I am at present inclined to affirm that iodide of potash has very little, if any, real value in the treatment of follicular disease of the naso-pharyngeal space. Latterly, I have rarely prescribed it in cases of this sort, with the hope of alleviating the catarrhal condition, and even though the patient may give a syphilitic history and show upon his body certain distinct manifestations of an early or advanced stage of the other specific

constitutional disease. Scrofula and tuberculosis may be decidedly benefited by the co-operation of cod-liver oil and a proper change of climate; but we are all too familiar with such cases, their long march, wearisome complications, and dread consequences, to be over-sanguine with regard to any method of caring for them now known to scientific observers. During the past year, in many instances in which the patient has been particularly annoyed by the fetid odor of his exhaled breath, I have given internally with great success small doses of salicylic acid combined with spirit of mindererus and glycerine. This I have done irrespective of the constitutional condition present. The following is the formula I have employed.

℞ Acid. salicylici..... ℥ i.
Liq. ammonii acetatis..... ℥ iij.
Glycerini..... ℥ i.
Aquæ ..... ad ℥ vi.
M. S. A tablespoonful every six hours.

This mixture will, at times in the course of a few days, render the breath quite inoffensive, when previously it had been nauseous to an intense degree, and caused great and almost unconquerable repugnance to every one who came within close proximity of the individual thus affected. Whenever the patient is slightly jaundiced, the tongue coated with a white or grayish fur, and there is almost complete anorexia, nothing seems to help matters more, even in the effects produced upon the catarrhal state of the naso-pharyngeal space, than the exhibition of a cholagogue. The three most advised in my estimation are euonymin, podophyllin, and hydrarg. c. creta. Of the former a grain or two should be given every evening on going to bed, during several successive days. Its action is frequently most satisfactory, as it starts the torpid liver to active elimination and thus frees the system of much effete material which was becoming rapidly resorbed. But

drugs given internally are not by themselves always sufficient to produce a rapid or permanent beneficial change of the glandular affection, even though it be of simple uncomplicated type.

The question, therefore, naturally arises: *locally*, how should post-nasal catarrh be treated?

It is, and has long been, a much mooted, discussed, and very difficult question to answer.

Quacks and other false prophets have caught hold of it, and made it a fruitful source of profit to themselves, by pointing out to the public ready modes of treatment which must infallibly cure their suffering, but misguided and short-sighted patients. Usually speaking, their remedies are predestined to work rapid recoveries, and no human organization is able to effectually resist their magical power for good during any appreciable lapse of time.

Further, we have soft-hearted and innocent divines, who publish long accounts of their experience and confidence in the columns of our daily press.

Meanwhile, we of the profession, who have regard for our present code of ethics, feel obliged to stand aside with folded arms, unable to appear in public and expose such shameful manœuvres.

It may be permitted to me, however, to state here that I have made a fair trial of more than one of these catarrhal specifics which are sold by many well-known druggists in New York and elsewhere, and have NOT found them to respond favorably to their *false* assurances.*

* As an evidence of the deception practised on a too confiding public, I would instance the nostrum widely known as "Wei de Meyer's Catarrh Cure." According to an accurate analysis of this powder, for which I am much indebted to Mr. A. E. White, pharmaceutist at Wm. Neer-

Amongst regular and honorable praetitioners there is, unfortunately, no method of local treatment adopted as yet which carries recognized authority with it. All is still vague and uncertain. One physician uses this solution, another that; one praetitioner believes in the curative action of powders of particular nature, and which are generally more or less astringent or caustic. A third party think the main thing to have ever in view is the preservation of perfect cleanliness of the parts affected, by watery medicated douches. These douches, according to most authorities, should be warm, or even hot, in temperature. A few specialists, however, of wide repute, recommend cold injections (Duplay). In my opinion, local treatment (no matter what may be its conditions) is *never* so efficacious as it is frequently believed to be. And this, to me, is true for two reasons: 1st, there is no instrument in general use which will bring either medicated solutions, sprays, or powders into immediate contact with *all* points of the Schneiderian membrane; 2d, applied after the manner which is usually employed, they *cannot* be of *real* service.

With respect to the first, I argue that all medicated solutions, applied by means of the different instruments in vogue for this purpose—viz., the ordinary Weber's douche (without regard to its different forms), Davidson's or Warner's syringe, the post-nasal syringe, etc., only reach a portion of the nasal cavities. This proposition has, I believe, been proved by me for the usual nasal douche with almost mathematical precision, in an article published in the *New York Medical Record*, August

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gaard's (28th street and Broadway, New York), it is found to consist simply of bicarbonate of soda, and a small quantity of pink coloring matter. Now all physicians know that bicarbonate of soda is employed continually by us in spray or powder in the treatment of catarrhal affections of the nose, and has absolutely no specific or wonderful action whatsoever.

1st, 1874. To this article I refer my readers and I will not repeat the arguments there employed in order to establish the fact.

And the first objection against the efficacy of local medication holds good, in my estimation, as well of finely atomized sprays and almost impalpable powders, as it does of solutions employed with a douche apparatus. Its accurate and evident demonstration is not, however, I candidly admit, so easily furnished.

To make my assertion, nevertheless, acceptable to many minds, it is only necessary they should recall: 1st, the numerous folds and infractuosities of the mucous membrane lining the nasal fossæ; 2d, the narrow orifices of communication which these latter have with several almost entirely closed cavities, such as the sphenoidal, ethmoidal, and frontal cells; 3d, the fact that the vertical diameter of the nasal passages, at their median portion, is double in extent the vertical diameter of the posterior openings of these same passages.

How, then, I may ask, is it *physically possible* for powders or sprays to reach all these parts; and even though this be admitted, can we accept that they will reach all points of the fossæ *in such quantity* as to be practically of much assistance in exercising curative results where the glands have been affected for a long while with a chronic morbid processus? With regard to the second objection, I argue that the solutions usually employed are not sufficiently concentrated to have any very great alterative effect upon the chronically diseased glands to which direct applications are made after this manner.

And yet we are so situated that we cannot, to any notable degree, increase the amount of the drug employed, for by so doing the douche is rapidly rendered very painful.

But to this it may be answered that, if the douche is recognized to be instrumental of benefit to our patients, we ought not to withhold its use because it causes great pain even when properly employed.

True, if it were essential only to use the douche or injections once, twice, or several times. But such is not the case. On the contrary, in all cases of post-nasal catarrh, these washings must be made once or twice daily, and continued for several months, if any apparent curative effects are to be anticipated on account of their employment. And to undergo this ordeal would require more patience and resolution than is frequently encountered.

The question now naturally presents itself, Whether or not any sort of local medication is useful or curative of post-nasal follicular disease, and in what measure ?

To this I reply distinctly, that local treatment is a decidedly powerful adjunct of general treatment, but to be so, it must be carried on wisely and with rigid discrimination of the diagnostic features of each case. Not that in the great majority of instances I believe topical applications will or can reach all the diseased parts. Nor am I convinced that alone they will effect absolute recoveries; for the best we should expect from them is, that they will materially aid and accelerate the effects of systemic remedies. For my part, as might be presumed from previous remarks, I at present do not use medicated solutions by means of the douche or syringe, even in old and aggravated cases of simple post-nasal catarrh. My line of conduct is traced for the following reasons, all of which have already been given, but which I shall repeat for the sake of clearness: 1st, they do not reach all parts of the nasal cavities; 2d, those parts which receive the contact of the medicated liquid are not favorably modified by the weak solutions which are of necessity usually employed in this way;

3d, they cause disastrous consequences in the special organs of hearing, smell, sight, and indirectly of taste.

To the use of solutions employed in the form of an interrupted stream, or of the continuous douche, I have substituted in my practice that of sprays and powders.

Sprays may be thus introduced into the nasal passages of a much greater degree of concentration without causing too intense pain, and without risk of injuring seriously the organs of smell or hearing, and they penetrate them quite as well as, if not more thoroughly than, injections. Besides, I have found sprays equally useful with the latter, when employed with a little persistence, in detaching hardened crusts of inspissated mucus from the naso-pharyngeal space. And their application is certainly far less irritating to the already inflamed membranes, and less irksome and annoying to the patient.

The temperature at which we should employ sprays is about that of the air we are habitually breathing. Very fine sprays approach nearly that state which we encounter in a foggy condition of the atmosphere, or in one where it is almost saturated with watery vapor. Now we all know that on the days when there is an excessive degree of moisture in the air, and the temperature considerably reduced, we feel heavy and oppressed, and that our respiratory action is not freely performed. One principal cause of this fact of our frequent experience is the exaggerated and continual imbibition of watery vapor by the mucous membrane lining our nasal cavities. The consequence is, it becomes infiltrated and swollen, and these passages are more or less obstructed, and their proper function appreciably interfered with.

This phenomenon is notably augmented, cæteris paribus, in proportion with the lowness of the column of mercury. It depends at last, then, upon the conditions which determine the direction of the endosmotic current across organic membranes.

Under these two ambient conditions this current predominates towards the vessels contained in the mucous and sub-mucous layers of the nose. Our sprays should, therefore, be *warm*, but *not too warm.*

For, we are aware that very many people pass most of their time, in winter and summer, in rooms where the heat ranges from 70° to 80° Fah. scale. This, therefore, is about the temperature at which sprays are to be employed by them. And a similar degree of temperature will be required doubtless in these sprays when made use of by others who are the greater part of the day in the open air; for inasmuch as they are of necessity very constantly exposed to all vicissitudes of the surrounding elements, their mucous linings habituate themselves, in the majority of instances, to frequent and rapid changes in the ambient medium, and therefore a mean between extremes is a safe rule to guide us.

If sprays are employed at blood-heat, true it is that during the period of their use the endosmotic current is not so likely, other conditions being the same, to take the direction towards the interior of the vessels. Almost immediately after their use is interrupted, however, the exterior ambient air which is inspired lowers the temperature of the medicated liquid which remains in contact with the walls of the nasal passages, and so practically we have little or no advantage from using an atomized fluid at the temperature named. In a problem somewhat complex, we should choose the solution which appears least open to weighty objection, and our first indications are viewed in this light, the most correct we are able to formulate.

Sprays should be concentrated, but not enough so to be caustic in their action. In this connection I feel called upon to write [on account of the hold that this doctrine has upon the minds of several accomplished observers, and because I am persuaded they are under the influence of an erroneous belief] that the use of

saturated solutions of different metallic salts, in the treatment of post-nasal catarrh, is radically wrong. As an example of what I wish to prove, take a highly concentrated solution of nitrate of silver, and let it be applied in spray to the posterior nares and vault of the pharynx, and what is the result? No doubt so intense an effect may readily be produced as to cover a great portion of the mucous lining with a superficial white slough, resulting from the combination formed between the nitrate and the albuminoid constituents of the membrane in and about the glandular orifices. And in this way, by putting a complete stop to all secretion for some time, or aborting it temporarily, as it were, it is possible to create the impression in the mind of a patient, and even be consoled one's self in the belief, that a cure is accomplished. But wait for a few days (without prejudging the situation) after making one or several of these caustic applications, and what will be found? One of two things: either the same secretion returning as previously, and with exactly the same characters and in the same amount, or else the quantity of the secretion from the naso-pharyngeal space may be diminished, although there yet remain, and will continue to show themselves, small pellets of a viscid, tenacious mucus, or muco-pus, of disagreeable taste, which are expectorated from time to time after repeated efforts of hawking, and are a source of great annoyance.

And even the diminished amount of secretion is not to be considered a gain in one aspect, for it is fairly attributable to the fact that the mucous membrane has become thickened and hardened in consequence of repeated cauterization, and that many of the glandular orifices have become obliterated either by cicatricial closure of their external openings, or by pressure from the adjacent patch of mucous membrane. So much for the treatment of nasal catarrh by the much-vaunted applications of concentrated sprays of nitrate of silver, which theoretically cannot effect what

it is pretended that they will do, if my view of the constitutional nature of catarrh be correct, and practically have led within my personal observation more than once to the above scarcely to be welcomed results.

The following formula of a solution to be used under the form of spray is a great favorite with me, and is somewhat modified from one recommended by Dr. Dobell, of London.

℞ Acid. carbol. liq .... ℥ xl.
Boracis,
Sodii bicarb..... .... āā ʒ ij.
Glycerini..... .... ʒ vij.
Aquæ..... ..... ad ℥ viij. M.

This spray, used once each day or every other day, during a few moments, and repeated several times on each occasion, by means of Sass' upward glass spray producer (fig. 50) attached to the

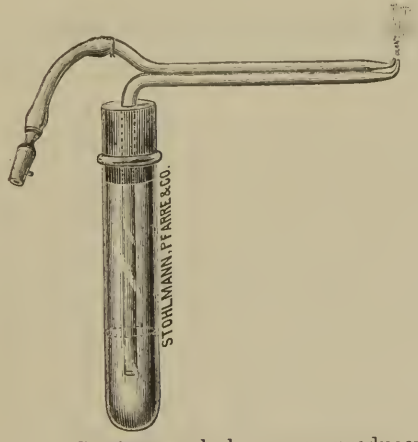

FIG. 50.—Sass' upward glass spray producer.

compressed air receiver, by means of rubber tubing and the ingenious, perfect working and self-closing cut-off (figs. 21 and 22), will act most favorably upon the catarrhal condition of the naso-

pharyngeal space. After its use, the hardened secretions become moistened and detached in great part, and quickly descend into that portion of the pharynx from which they may be expelled readily by a slight effort of hawking and expectoration.

Whilst this statement is true of nine-tenths of the cases of post-nasal catarrh we are called upon to treat, there are some notable exceptions: In these examples the spray is no more sufficient, unless employed for an undue length of time at each sitting, to detach the hardened masses of mucus from the vault of the pharynx. We are in reality almost compelled to make use of a brush curved at right angle to its handle and fixed to this handle by a stout aluminium wire (fig. 51). By its aid and after moist-

FIG. 51.—Right-angle brush for applications to the naso-pharyngeal space (Mackenzie).

ening it in water, we are able with but little difficulty to introduce it behind the soft palate in an upward direction and brush the basilar process quite clean of its adherent mucus. Sometimes the mucus comes away upon the brush; sometimes the brush merely detaches it and it soon falls into the middle pharynx from which it is thrown off by an effort of expectoration. A spray, formulated as I have indicated above, will also act as a very effectual deodorizer of the naso-pharyngeal space, whenever the expired breath becomes offensive, owing to the chemical changes which take place frequently in the pent-up secretions. Further, it acts favorably as an anti-plastic remedy, thanks to the amount of alkali which enters into its composition, and will subdue, in a measure, the infiltration of all points of mucous membrane where its

contact is thoroughly and repeatedly made. Besides, it has a tendency to lessen extreme viscidity of secretion in partially dissolving it, and is, therefore, grateful as a palliative remedy, when the mucous secretion of the naso-pharyngeal space is very tenacious and difficult of separation and expulsion. As the disease improves and there is less formation of inspissated secretions in the naso-pharyngeal space, it is not advisable to make use of the carbolic spray more than once every other day, or twice a week. The reason for this counsel is, that when the affection is almost well, the solution is too relaxing in its effect upon the mucous membrane and its need as a detergent application is under these circumstances no longer apparent. To this expression of conviction I am desirous to add, however, the statement that the formula as above given, of Dobell's carbolic spray, has now been employed by me almost daily for several years, and as yet I have been unable to improve it, as an ordinary cleansing and somewhat curative mixture for the atomizer. In a late number of the *St. Louis Medical and Surgical Journal*, Dr. Thomas F. Rumbold * insists upon a spray thus composed:

℞ Vaseline ..... ℥ ij.
Glycerine ..... ʒ ij.
Carbolic acid ..... ♏ x. M.

This should be warmed before application. It is not unpleasant to the taste and has a very soothing and agreeable effect. It should be applied once in from two to six hours. Dr. Rumbold's great experience gives this recommendation more than ordinary authority. After employing the carbolic spray, I make use habitually, with excellent results, of one of the following powders, in insufflations behind and above the palate.

* April, 1879.

1. ℞ Pulv. iodoform.,
P. g. acaciæ..... āā ʒ ij.
Morphiæ sulph.....gr. ij.
Acid tannici.....gr. ij. M.

or this,

2. ℞ Pulv. iodoform ..... ʒ ij.
Pulv. camphoræ..... ʒ i.
Pulv. acid. tannici.....gr. x.
P. g. acaciæ..... ʒ i. M.

or this,

3. ℞ Pulv. belladonnæ.....gr. xx.
Pulv. morphiæ sulph.....gr. ij.
Pulv. g. acaciæ..... ℥ ss. M.

Occasionally, also, I have found the following powders useful:

4. ℞ Pulv. cubebæ..... ℥ ss.
Pulv. sodii bicarb..... ʒ ij.
Pulv. acid. salicylici.....gr. x.
Pulv. sacch. alb..... ʒ ij. M.

5. ℞ Bismuth. subnit..... ʒ iiss.
Hydrarg. chlor. mitis..... ʒ ss.
Morphiæ sulph.....gr. iij.
Pulv. acaciæ..... ʒ i. M.

Iodoform pure; bismuth, the sub-nitrate and the sub-carbonate, are also frequently made use of. In rather obstinate forms of disease and in those cases in which these powders remain without good effects, I employ the following once every four or five days.

6. ℞ Pulv. bismuthi subnitratis..... ʒ iij.
Pulv. argent. nitratis.....gr. vij.
P. g. acaciæ ..... ʒ i. M.

Nitrate of silver in this proportion is often a useful adjunct to treatment. In greater quantity, relatively to the amount of powdered menstruum, I have rarely found it useful. After very many

trials, I have concluded that nitrate of silver, employed in powder in the way I have mentioned, is far preferable to its use in solution. In this form it does not blacken either the fingers or face of the physician or patient, and it does not discolor surrounding objects. Moreover, it remains applied a longer time to the diseased surface and is less liable, if limited in its application, to produce artificial cold in the head, which lasts a day or two, than when it is in solution. It must not, however, be employed oftener than I have mentioned, in the majority of cases, as it will rather tend to increase local inflammation than to diminish it. Upon intervening days the other powders may be applied to the naso-pharyngeal space with excellent results. In those instances in which the exhaled breath is unusually fetid, not only do I now give salicylic acid internally, according to the formula previously recommended, but I likewise make use of it in local applications to the naso-pharyngeal space, where it certainly produces a favorable change in the odor of secretions. The following formula is one I have repeatedly used.

℞ P. acid. salicylici..... ..... 3 ij.
P. g. acaciæ .... 3 iv. M.

Use with the powder blower for the naso-pharyngeal space and posterior nares.

There is one precaution which it is well to mention in the use of this powder, viz., the operator should be careful to get the curved tube well up behind the palate before blowing the powder into the naso-pharyngeal space. Otherwise some of it will lodge on the buccal portion of the pharynx and occasion a stifling or choking sensation, with some spasm of the constrictor muscles, which lasts during a few seconds. When it is well blown into the naso-pharyngeal space, I have not noticed this unpleasant, and sometimes painful symptom. Whenever a patient can be treated in my office, I make use of powder-blowers in hard rubber of different curves, as shown in fig. 30, and which are attached

by means of a bayonet-joint to a cylinder of compressed air. If the patient must be treated at home or elsewhere away from my office, the powders should be applied by means of the ordinary post-nasal powder-blower (fig. 29). When the secretion above the soft palate has become, or is already, moderate, and can be detached easily and expectorated by a voluntary effort of the patient, I occasionally content myself with an application daily, or every other day, of one of the powders already formulated or another analogous one, varying it somewhat according to the evident indications of the case, and do not make use of the spray. Medicated powders modify the condition of the mucous lining most favorably, and apparently produce those alterative changes we are anxious to attain. Besides, they are free from one objection pertaining to the employment of atomized liquids, viz., that by employment of these latter, endosmotic effects in the direction of the vessels are occasionally produced to excess. Active drugs used under the form of a powder may be applied either pure or mixed to any required extent with inert or feebly efficient agents. Powdered gum is especially indicated as the proper vehicle of other powders of greater curative properties, whenever a spray is not used and the mucous membrane of the post-nasal space is only partially or very lightly covered with catarrhal secretions; for its osmotic power is probably developed in a greater degree than that of other powders; and under the circumstances mentioned, it may serve a useful purpose in diminishing infiltration of the sub-mucous layer. It will be remarked, from what precedes, that I find myself in direct opposition with the categoric affirmation of a distinguished throat specialist of the day, who writes: "All forms of snuff or of powders in the treatment of naso-pharyngeal affections are objected to, the mucous membrane of these passages not being constructed by nature for their reception." *

* A Practical Guide to Diseases of the Throat, Lennox Browne, p. 161.

There are cases, however, in which sprays and powders are ineffectual to obtain curative results. At times, therefore, after removing the inspissated mucus from the naso-pharyngeal space by a curved brush or even with a short forceps curved at right angles for manipulation in this cavity (fig. 52), I paint the entire vault of the pharynx with one or other of the following mixtures:

1. ℞ Tinct. iodinii.....gtt. x.—xxx.
   Glycerini.....ʒ i. M.

2. ℞ Tinct. opii.....ʒ i.
   Tinct. iodinii.....gtt. v.—x. M.

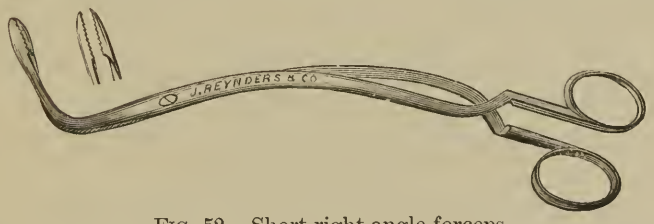

FIG. 52.—Short right angle forceps.

These applications are quite painful for a short time after they are made, but often do good service in altering the character of the secretions. I have infrequently applied the following after a similar manner:

3. ℞ Tinct. ferri perchlor.....ʒ i.
   Glycerini.....ʒ i. M.

Ordinarily this pigment produces too much drying of the naso-pharyngeal space, and I have been obliged to abandon its use. Topical medication by means of iodine or iron, in the way indicated, should not be repeated more than twice a week, even in bad cases, or else the naso-pharynx becomes sore and irritable. Occasionally I have found useful the inhalation of certain dry vapors, such as those of carbolic acid, iodine, tincture benzoini

comp., ol. pini sylvestris, etc. When these substances have been employed, I have made use, at times, of a hard rubber instrument (fig. 53), somewhat oval in shape, which can be unscrewed at its centre (B) so as to make two parts. In its interior, which is hollow, there is a receptacle for a small sponge which is limited upon two sides by a perforated hard rubber plate (D). The extremities are closed by hard-rubber stoppers (E) attached by threads to the body of the instrument. When about to be used, a few drops of the volatile fluid are poured upon the sponge, the two sections are screwed together, the stoppers are permitted to hang down loosely, and one end of the instrument is introduced into one and then into the other nostril. Air is inspired slowly

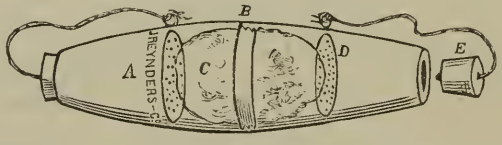

FIG. 53.—Hard-rubber Pocket Inhaler for dry vapors.

during a few moments and brings with it balsamic or other vapors which impinge directly upon the affected mucous membrane of the nasal and naso-pharyngeal cavities. I have also frequently employed, with a similar purpose in view, the instrument previously mentioned (fig. 23). By its use the vapors are projected into the nasal passages, and when only used occasionally, tend to arrest the formation of mucous secretions in the naso-pharyngeal space. Frequently employed, they dry up the glandular secretion too rapidly and occasion a slight subacute inflammation of the mucous membrane lining the anterior nasal passages. Latterly, I have had occasion to adopt the method of Philip S. Wales, M.D. (*N. Y. Med. Record*, Vol. X., p. 785, 1875), for controlling the velum palati, and enlarging the pharyngo-buccal aperture. It is effected by means of an india-rub-

ber cord, about two millimetres in diameter, and of suitable length to pass through both sides of the nose, and after passing around the posterior margin of the soft palate is tied around the ears and under the chin. Wales thus describes this simple and admirable procedure: "One end is introduced into each nostril until they both reach the lower portions of the pharynx. At this moment the patient is directed to cough, if the presence of the thread has not already excited this movement, the force of expiration will pretty surely project them into the mouth, when they may be apprehended with the fingers and drawn externally until the middle portion of the cord, which is external, is arrested against the nasal septum, gentle traction is continued until the soft palate is well drawn forward, when the threads are passed up over the ears and downwards beneath the chin, and there tied; or they may be held by the patient himself. . . . Should any impediment whatever exist in the nostrils that the cord cannot be passed by itself, the following little instrument works admirably as a cord-carrier. . . . It is a thin lamina of soft metal, six inches long and less than an eighth wide, and mounted at each extremity with a small ring of an amplitude a little greater than the elastic cord, which having been passed through them, is tipped with small, smooth, oblong fragments of lead.* When the instrument is to be used, the cord is drawn through the rings until one of its tips comes against the corresponding ring; slight tension of the elastic will retain the two in contact, while the point thus formed is being conducted along the inferior meatus. When the metallic point reaches the posterior wall of the pharynx, the elastic projecting externally is pulled through the exterior ring, and made quite slack, so that the instrument may be withdrawn from the nares,

* An instrument made for me by Tiemann & Co., after this description, has not thus far proved very satisfactory.

leaving the cord in position; a similar procedure is then practised upon the other nostril." Dr. Wm. F. Duncan employs the following device, which appears to him preferable to Wales' instrument; he makes use of an ordinary English catheter of small or medium size, provided with a wire conductor. Into the eyelet of the catheter he inserts an elbow of tape some inches distant from its distal extremity, and fixes it by pushing the conductor home. The catheter is then given a suitable curve, and, together with the tape, its further extremity is passed over the floor of the nasal fossæ until it reaches the median portion of the pharynx, where the end of the tape which projects into the throat can be seized with a pair of dressing-forceps, and pulled through the mouth so soon as the wire-director is withdrawn a short distance, and no longer holds the tape in the eyelet. The catheter is then pulled out of the fossa, the tape left in situ, and the same manœuvre adopted for passing the tape through the other nasal fossa. The rest of Dr. Duncan's procedure is similar to that of Dr. Wales. It will be remarked that Dr. D. employs tape instead of elastic cord, and believes it answers quite as well in the great majority of cases.

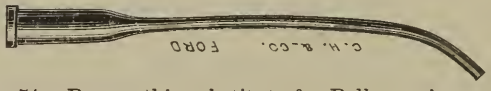

Fig. 54.—Bosworth's substitute for Bellocque's canula.

At a stated meeting of the New York Academy of Medicine, held on April 15th, 1880, Dr. F. H. Bosworth exhibited a simple and practical substitute for Bellocque's canula, which is also well adapted to carrying a cord through the inferior meatuses. This instrument (fig. 54) is a shortened Eustachian catheter of small calibre, bent somewhat at its distal extremity, so as to adapt itself to the curved inclination of the floor of the nasal

fossæ. It may be readily passed through them, and afterwards, by pushing the cord slightly with the fingers, it comes into view, and may be seized with an ordinary dressing-forceps, and pulled through the mouth, while the catheter is drawn out of the anterior naris. The ends of the cord are then tied over the upper lip, and the same manœuvre is executed through the nasal passage of the opposite side. In the event of great deviation of the nasal septum, it may be possible to pass a cord through only one nasal passage, but even in that case we shall get some enlargement of the naso-pharyngeal space, and can, therefore, operate with greater ease and security.

Dr. Wales, in his article, remarks that "the mucous membrane of the nose and throat is by far more tolerant of the contact of elastic substances than of metallic objects, and it is surprising how little indeed in many cases is the irritation caused when the soft palate is doubled upon itself and stretched forward by the cord . . ." The chief merits of this method, as Dr. Wales truly states, "are the simplicity of the apparatus and the facility with which any professional person may employ it in exploring the posterior nares and the pharyngeal cavity." When the elastic cords are in position and tied, we can use the rhinoscopic mirror perfectly well with the left hand, whilst with our right hand we can make any local application to the naso-pharyngeal space we desire, without fear of doing serious injury to the surrounding parts. We, moreover, have the great satisfaction of seeing in the small mirror the reflected image of the vault of the pharynx, and, of course, also of any instrument we introduce there during the whole time of its presence. I have had occasion latterly to employ Wales' method many times for the direct cauterization of the enlarged follicles of the naso-pharyngeal space, by means of nitrate of silver fused on the end of an aluminium probe. The applications have usually been made very

readily, with only slight after-discomfort to the patient, and with obviously very good results where sprays and powders, locally applied at regular stated intervals during a long period of time, and internal remedies of various kinds faithfully employed, had not resulted in anything more advantageous than temporary good effects. Except in extreme cases, however, I would not advise these applications of pure nitrate of silver, as I am of opinion that they may, by causing closure of the orifices of the glands, do permanent injury to the patient. And when such applications are made, they should not be repeated more than once in four to six days, and should be stopped as soon as practicable. It is for the reason given above that I have been loth hitherto to employ other stronger cauterizing agents, such as chromic acid, nitric acid, etc.* In regard to an instrument for such applications, nothing is more simple than the conception of one which would perfectly satisfy the indications of any hypothetical case which might arise. For example, all that would be required would be a concealed caustic holder mounted upon a flexible metallic shank, which could be curved at any required angle and length. Further, the spring inside could be so graduated in strength as to be perfectly adapted to either solid caustics or to liquid ones, which would saturate a piece of sheet spunk or cotton-wool placed between a disk which would cover the spring of the holder and its distal extremity, both of which should be made of some substance which would be unaffected by the action of corrosive agents. As a further protection to the patient, if

* During the past winter, I have had occasion to employ chromic acid several times in the naso-pharyngeal space. I have made use of it by soaking the roughened extremity of an aluminium probe, wrapped with absorbent cotton, in the liquefied acid. Its action is more intense than that of nitrate of silver, and the patient has suffered considerably after its thorough application. Care should be taken, so that the acid shall not be in excess and run down the post-pharyngeal wall.

required in any particular instance, an outer shield in hard rubber might be arranged, somewhat after the manner of one now to be described, upon a very perfect galvano-caustic electrode, devised for operations in the region of the naso-pharynx by Dr. R. P. Lincoln, of New York. The description of this instrument, with a figure, appeared in the *New York Medical Record*, December 30th, 1876. It was first employed by Dr. Lincoln in the treatment of a large naso-pharyngeal polypus. Since that time, Dr. Lincoln has been very successful in treating, by means of this same

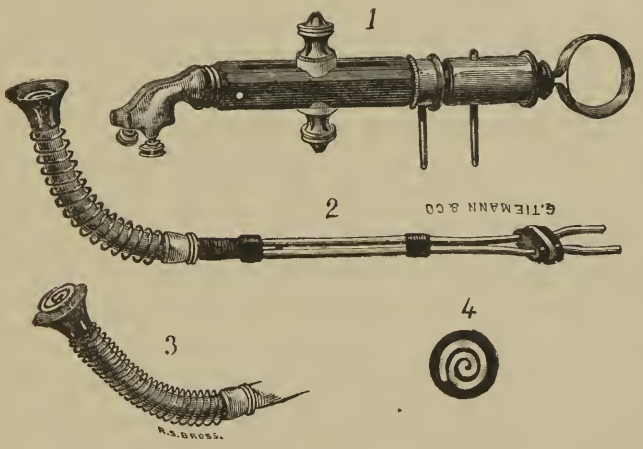

FIG. 55.—Lincoln's galvano-caustic electrode and Leiter's handle.

instrument, another formidable case of naso-pharyngeal polypus and several cases of hypertrophied glandular tissue of the vault of the pharynx. As such an instrument may possibly be used with advantage in burning away entirely the enlarged follicles in specially aggravated forms of chronic follicular disease of the naso-pharyngeal space, in which applications with fused nitrate of silver or some other more active caustic agent had proved insuffi-

cient to obtain a radical cure, I give herewith the figure with its description in the words of Dr. Lincoln* (fig. 55).

"1. Leiter's universal handle; 2. Electrode, on which is fixed a spiral spring terminating a shield of bone concealing a platina disk, which terminates the electrode ; 3. The same with the disk disclosed by the recession of the shield when pressed against the diseased tissues in the act of cauterization. The shield serves to protect the surrounding parts in case the instrument is grasped by them during the operation. 4. The disk in its relation with the shield. The above figures are one-half the size of the original." Preceding this description, Dr. Lincoln made the following important remark: "In some cases the shield described below may be dispensed with, either on account of the patient being able to avoid contraction of the palate during an operation, or when it can be controlled by some retractor, as the rubber cord suggested by Dr. Wales." The electrode, in the form of a disk, of Dr. Lincoln appears to me better adapted, as a rule, for cauterizations in the naso-pharyngeal space than the one of Dr. Shurly, as shown (fig. 40, 3). Of course, there may be cases of ulcerative diseases, or of enlarged follicles, occupying a very small area, which could be treated with more accuracy by Dr. Shurly's electrode, or again, as it appears to me, when the case is almost cured, but with still one or more spots close to the lateral pharyngeal walls which require cauterization.† "For applications at the vault of the pharynx and posterior nares, Dr. Shurly uses (fig. 40, 3) either a long electrode or knife, insulated, except at the extremity, which is passed through from the anterior nares and applied to the part under the guidance of the rhinoscopic mirror, or curved electrodes with platinum

* Naso-pharyngeal polypi, by Dr. R. P. Lincoln, of New York. *St. Louis Medical Journal*, Nov., 1879, p. 461.

† *St. Louis Med. and Surg. Jour.*, Jan. 5th, 1880.

points, constructed so as to pass through the mouth and up behind the soft palate to the point or points to be touched."

Dr. Shurly says, further on, that perfect control of the electric stream may be obtained by using a handle with a spring switch (fig. 40, 2), easily managed by the operating hand, such as has been made for him by the Detroit Electrical Works.

I have never as yet had occasion to make use of the galvano-cautery in the naso-pharyngeal space in a case of *post-nasal catarrh*, and, therefore, hold that the indications of such radical treatment must be very infrequently encountered. Inasmuch as some amongst my friends and colleagues, upon whose medical acumen and judgment I place great reliance, have met with such instances, I wish to make the text of my work as complete as possible, and have, therefore, given the woodcut and description of Dr. Lincoln's instrument.*

It should always be kept in mind, however, by any one who proposes to operate with the galvano-caustic disk, that once it has been applied, the tissues operated upon can never be restored to normal function. The enlarged follicles, or hypertrophied gland-

* Since writing this description, I have had occasion several times to apply the heated platina disk to hypertrophied glands of the naso-pharyngeal space, which had been almost constantly the seat of hardened and foul crusts during several years. I found the *electrode* of Dr. Lincoln, with shield of bone, too long and bulky to be of much use. Moreover, the curve of its distal extremity was not enough of a right angle to reach properly the diseased parts, and the margin of the bony shield pressed against the pharyngeal wall in an oblique direction, so as to prevent the direct coaptation of the heated disk with the enlarged glands, when pressure was made at Leiter's handle. A smaller disk, without shield, curved almost at a right angle, worked admirably. The pain of the application was slight, and after its moderate use the glandular surface was redder than usual, with a dull, grayish border, of irregular outline. Absorbent cotton, wound with silk, was employed advantageously as an isolating substance for the shank of the electrode, instead of asbestos. This means, I believe, was first employed by Dr. Benj. F. Dawson, of New York.

ular tissue, is completely and forever destroyed, and in its place we can only count upon a cicatricial tissue, whose function, by its constant tendency to contract, may become worse than useless as regards the ultimate comfort of the patient. Now the employment of substances, such as sulphate of copper, nitrate of silver, and even chloride of zinc and chromic acid, if lightly and carefully applied, still allows hope of a partial return of diseased glandular tissue to healthy power.

Finally I would direct attention to the use of the galvanic current in the treatment of post-nasal catarrh, especially when it is accompanied by a considerable degree of hypertrophy of the mucous membrane covering the turbinated bones, or by marked enlargement of the follicles of the naso-pharyngeal space. By certain authors it is said to be very efficient. In fact, a very late publication * speaks of it in the following eulogistic terms : "Of all therapeutic remedies I value none more highly than electricity." Beard and Rockwell † remark that "subacute and chronic inflammations of mucous membranes are susceptible of electrical treatment, may indeed be permanently as well as temporarily relieved by it, though but rarely does it work an entire cure unless aided by other measures." Further on they report a case (CCXXI.) of nasal catarrh, of a most persistent and annoying type, in which complete and permanent recovery resulted under local galvanization. They also relate two cases of anosmia; one of which improved under treatment by local faradization, the other recovered under localized galvanization. In both cases it had existed several years. Whenever electricity is employed, the nasal electrode (fig. 56) should be attached to the negative wire of the battery and introduced well up into the nasal passages, whilst the positive

* The Treatment of Post-Nasal Catarrh, by W. R. D. Blackwood, M.D., *Phila. Med. Times*, Nov. 8th, 1879, p. 57.

† Medical and Surgical Electricity, pp. 682–85.

sponge electrode should be applied over the nose exteriorly, or along the side of the face and neck. The number of cells employed must not exceed three or four, at least for the first applications of the current, and the duration of the application should not exceed five to ten minutes. The introduction of the electrode will usually occasion a paroxysm of inconvenient sneezing, followed sometimes by more or less giddiness.

The faradic current may also be employed in a similar manner with the galvanic current, and sometimes with excellent results. The two currents may be employed alternately, on different days.

Fig. 56.—Nasal Electrode.

By the frequent use of these electrical applications, during several weeks or months, the parts implicated may be restored to a state of healthy nutrition. Through their influence over some of the peripheral branches of the fifth cranial pair of nerves, the absorbents are made to act more energetically; effused serum or plastic deposit is in this way got rid of, and permanent benefit has resulted to the patient.*

In conclusion I give it as my opinion, after considerable thought

* I have now four cases under my care in which I have employed the galvanic and faradic currents. With two the applications have already been frequently made, and during many weeks. In one case my patient affirms that the applications of electricity have been of more service in lessening the amount of mucus secreted in the naso-pharyngeal space than any other treatment he had previously tried. This patient, besides the use of different powders, had been subjected to repeated cauterizations. I have found a mild faradic current from a Flemming & Talbot's battery, No. 3, more agreeable to, and borne more readily by the patient than a very mild current from the galvanic battery (Galvano-Faradic Co., 24 cells).

and experience of the disease which forms the title of this lengthy essay, that local medication is of service more particularly, and in the great majority of cases, in diminishing the thickening, and effecting healthful alterations in the patches of mucous membrane situated around the glandular orifices, and thus counteracting the morbific influence upon surrounding parts of the product of secretion of the mucous glands themselves. But I do not believe that it accomplishes much that is worthy of being recorded, in so far as the glands are concerned; for in order to bring back these primitively diseased structures to their normal state, it is essential to have recourse to a long-continued exhibition internally of special drugs, and what these should be, in my estimation, I have already made known. To this statement I would only make exceptions for a few rare and aggravated cases, which have resisted other methods of cure, and in which the border line seems to have been reached which separates chronic follicular disease of the naso-pharyngeal space from adenoid vegetations of the vault of the pharynx and in which I now resort to direct applications of sulphate of copper, fused nitrate of silver, etc., having abandoned as useless all internal general medication. In all other instances, I continue to believe that by a combined general and local treatment, carried out intelligently and persistently, we may fairly hope to alleviate all, and to cure many of our patients suffering from chronic post-nasal catarrh. In no different way do I recognize the possibility, for the present, of attaining such good results by any other known method of treatment.

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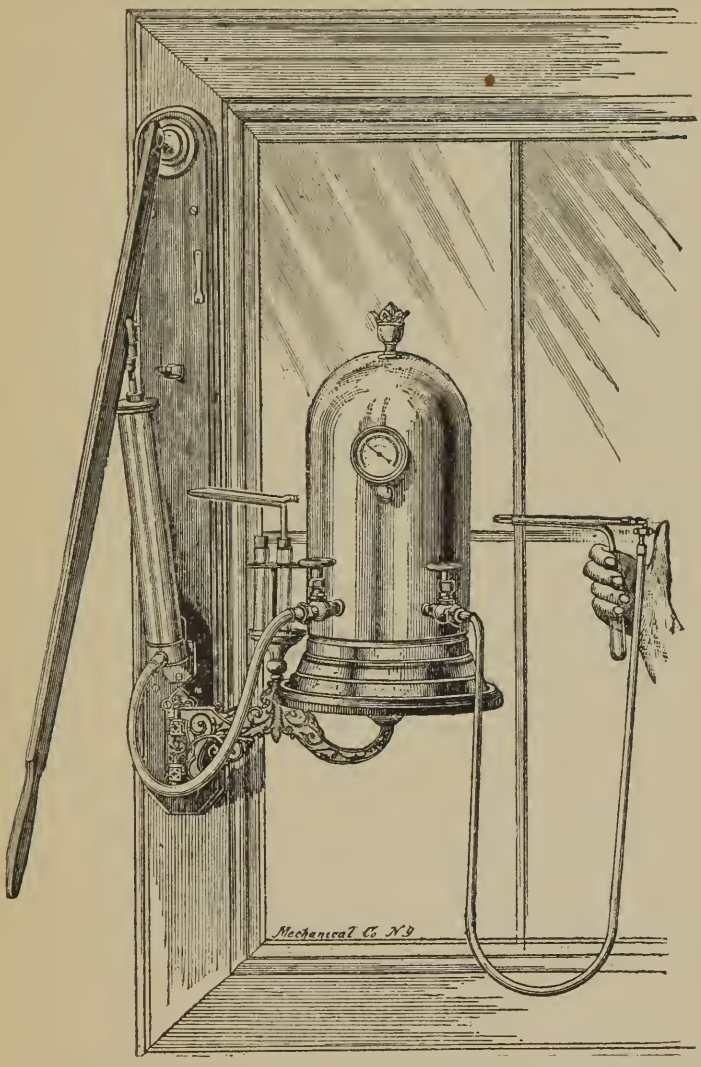
A New Form of Spray Apparatus and Tubes,

As Devised by W. C. WILE, M. D., of Sandy Hook, Ct.

I desire to call the attention of the profession to a new spray apparatus which has recently been devised, and which for completeness and beauty is excelled by none in the market. The great trouble with most spray machines is the great labor involved in filling the receiver. This is all done away with and a few easy strokes of the lever soon fill the tank. A brief glance at the accompanying cut gives a good idea of the mode of its construction.



Its advantages over all others' are as follows:

The air receiver is three times larger than ordinary, the value of which is at once apparent to any one who has used the old style. It is tested to two hundred and seventy pounds to the square inch, and as the gauge which is attached to it only records eighty pounds, it will at once be seen that it is an eminently safe instrument.

The valves are perfectly air-tight and very simple in their construction and not at all likely to get out of order.

The pump, instead of being an ordinary affair held down to the floor by the feet when pumping, and being very laborious to work at twenty pounds pressure, is attached to a bracket with an oscillating piston and lever, and can be pumped to a hundred pounds pressure to the square inch with ease. When the gauge indicates one pound pressure, every full stroke of the piston increases the pressure one pound, thus making it a very easy and quick manner of filling the receiver. The receiver is detached from the pump in a moment and stands on a swinging shelf with a stand to hold the vials and tubes when not in use. The vials are of special design, with thick necks to prevent their breaking in putting the corks containing the tubes in, an extra collar of glass being provided for that purpose.

The cut off is very simple in its construction and not at all liable to get out of order. It is always ready for use, perfectly air-tight and responds to the lightest touch.

The spray tubes are after the pattern of Sass, but instead of being made of two tubes cemented or riveted together, which are extremely liable to break or spring and leak, are made of one solid piece of hard rubber, and the tips, instead of being permanently attached to the body of the tubes, are screwed in and are made interchangeable. By the means of a small wrench, which accompanies each instrument, they are readily unscrewed and taken out for purposes of cleansing, which is a great convenience. Any one who has attempted to clean an ordinary Sass tube when clogged will appreciate this point. Their great strength makes it almost impossible to break them by any ordinary usage. The metal parts are of the highest polish and nickle plated: the wood is of black walnut and so constructed as to be attached to a window casing or any where desired. The lever is of ash and so made that by with-drawing a pin it becomes disengaged from the pump, the latter being held by a catch, the lever dropping out of the way. Its low price, $75.00, brings it within the reach of all.

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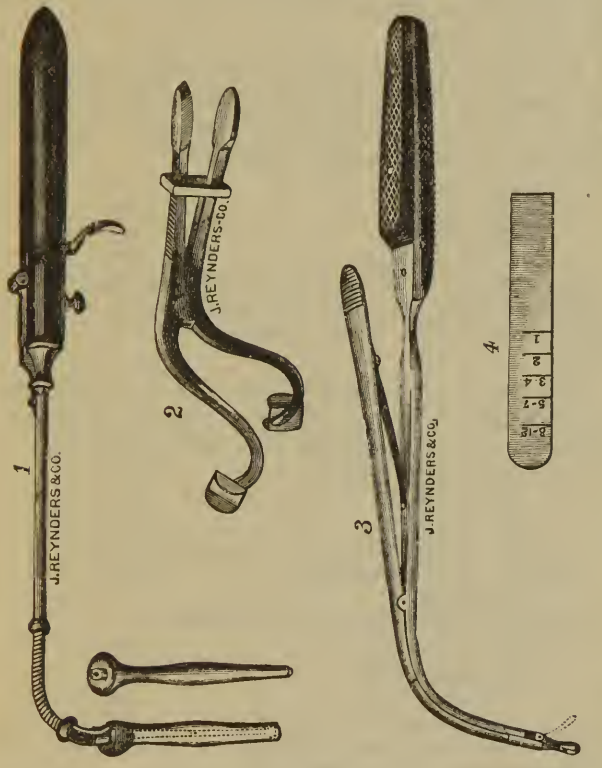
5 Laryngeal Tubes, Fig. 1.
1 Mouth Speculum, Fig. 2.
1 Extractor, Fig. 3.
1 Scale, Fig. 4.
In Morocco Velvet-lined Case.

The numbers on the scale (Fig. 4) indicate the years for which the corresponding tubes are suitable. For instance, the smallest tube when applied to the scale will reach to the first line, marked 1, and is intended to be used up to the age of twelve or fifteen months; the size marked 2 is suitable for the next



year, 3 and 4 for these years, and so on. When the proper tube is selected for the case to be operated on, a fine thread is passed through the small hole near its anterior angle, and left long enough to hang out of the mouth, its object being to remove the tube should it be found to have passed into the œsophagus instead of the larynx.

The Obturator is then screwed tightly to the Introducer, to prevent the possibility of its rotating while being inserted and passing into the tube; the groove in the upper extremity of the Obturator being made to correspond to the small hole in the tube intended for the string.

The following is the *method of introducing the tube*, which is done without the use of an anæsthetic. The child is held upright in the arms of a nurse, and the Speculum (Fig. 2) inserted in the left angle of the mouth, well back between the teeth, and opened

Aquæ . . . . . Oi.

And as a gargle :

Acid, carbolic,
Zinc, chlorid. . . . . āā grs. xv.
Syrup, morph. hydrochl. . . ℥iv.
Inf. cocæ fol. . . . . ℥viss.

A Disinfectant Mixture for Apartments.—A contributor to the *Union Mèdicale* gives the following formula :

Camphor . . . . . 20 parts.
Calcium hypochlorite . . . 50 "
Alcohol . . . . . 50 "
Water . . . . . 50 "
Oil of eucalyptus . . . . 1 part.
Oil of cloves . . . . . 1 "

Mix in a large vessel kept cold. A few drops on a napkin are enough to disinfect a room.—*New York Medical Journal.*

An Agreeable Vehicle for Paraldehyde.—At a meeting of the Brooklyn Pathological Society, Dr. Eccles recommended the following as an agreeable way of administering paraldehyde :

℞.—Paraldehyde,
Almond oil . . . . āā ℥ij.
Chloroform . . . . . ♏x.
Oil of cinnamon . . . . ♏ij.—M.

Sig.—One-half to be taken at bedtime, and the remainder during the night if required. It may be taken undiluted, although ordinarily it will be advisable to give it in a little water.

Treatment of Diphtheria.—Dr. F. B. Drescher (*Weekly Medical Review*) has made use of the following treatment in diphtheria with marked success :

℞.—Hydrargyri bichloridi . . . gr. ½.
Spts. frumenti . . . . ℥i.
Syr. simplicis . - . . . ℥i.—M.

Sig.—Teaspoonful every three hours, night and day.

℞.—Liq. ferri subsulphatis . . . ℥ij.
Glycerine . . . . . ℥ij.—M.

Sig.—Brush the throat once or twice daily.

℞.—Tr. ferri chloridi . . . . ℥ij.
Potassii chloratis . . . . ℥i.
Glycerini . . . . . ℥iss.
Aquæ cinnamomi, q. s. ad. . . ℥iij.—M.

Sig.—Teaspoonful in teaspoonful of water every three hours, night and day.—*Medical Age.*

We note the following from the *Therapeutic Gazette* of April 5, which is recommended as a most excellent remedy for the itching piles :

℞.—Tinct. capsicum . . . . 1 part.
Spts. turpentine . . . . 2 parts.
Spts. camphor . . . . 3 "
Decolorized iodine . . . . 3 "

—*Chicago Medical Times.*

If the above don't cure the itching, we think it will act in the same manner that powdered ginger did, when blown up the rectum of the staking horse.

NERVOUS COUGH.

℞.—Acidi hydrocynici dil. . . . ℥i.
Tinct. sanguinariæ . . . . ℥ss.
Syr. senegæ . . . . . ℥iv.
Aquæ lauro cerasi . . . . ℥vij.
Syr. tolu . . . . . ℥ij.

—*Medical Summary.*